## AUG 1 4 2007 . SEQUENCE LISTING ATTENDED TO <110> Michael Garman, Jonathan David <120> Method of Reducing Injury to Mammalian Cells <130> 026373-000300US <140> US 10/584,831 <141> 2004-12-22 <150> US 60/532,169 <151> 2003-12-23 <160> 384 <170> PatentIn version 3.1 <210> 1 <211> 4 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <220> <221> MISC FEATURE <222> (1)..(4)<223> 'X' is any amino acid <400> 1 Xaa Leu Met Leu <210> 2 <211> 6 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide

<210> 3

<400> 2

<211> 93

<212> PRT

<213> Artificial Sequence

Glu Trp Lys Phe Ala Arg

<220>

<223> Synthetic peptide

<400> 3

Leu Arg Lys Glu Pro Glu Ile Ile Thr Val Thr Leu Lys Lys Gln Asn
1 10 15

Gly Met Gly Leu Ser Ile Val Ala Ala Lys Gly Ala Gly Gln Asp Lys
20 25 30

Leu Gly Ile Tyr Val Lys Ser Val Val Lys Gly Gly Ala Ala Asp Val 35 40 45

Asp Gly Arg Leu Ala Ala Gly Asp Gln Leu Leu Ser Val Asp Gly Arg 50 55 60

Ser Leu Val Gly Leu Ser Gln Glu Arg Ala Ala Glu Leu Met Thr Arg 65 70 75 80

Thr Ser Ser Val Val Thr Leu Glu Val Ala Lys Gln Gly 85 90

<210> 4

<211> 105

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 4

Gly Lys Gly Leu Gly Phe Ser Ile Ala Gly Gly Arg Asp Cys Ile Arg 20 25 . 30

Gly Gln Met Gly Ile Phe Val Lys Thr Ile Phe Pro Asn Gly Ser Ala 35 40 45

Ala Glu Asp Gly Arg Leu Lys Glu Gly Asp Glu Ile Leu Asp Val Asn 50 55 60

Gly Ile Pro Ile Lys Gly Leu Thr Phe Gln Glu Ala Ile His Thr Phe 65 70 75 80

Lys Gln Ile Arg Ser Gly Leu Phe Val Leu Thr Val Arg Thr Lys Leu 85 90 95

Val Ser Pro Ser Leu Thr Asn Ser Ser

105

100 <210> 5 <211> 105 <212> PRT <220> <400> 5

<213> Artificial Sequence

<223> Synthetic peptide

Gln Ser Glu Asn Glu Glu Asp Val Cys Phe Ile Val Leu Asn Arg Lys 1 5 10

Glu Gly Ser Gly Leu Gly Phe Ser Val Ala Gly Gly Thr Asp Val Glu

Pro Lys Ser Ile Thr Val His Arg Val Phe Ser Gln Gly Ala Ala Ser 40

Gln Glu Gly Thr Met Asn Arg Gly Asp Phe Leu Leu Ser Val Asn Gly

Ala Ser Leu Ala Gly Leu Ala His Gly Asn Val Leu Lys Val Leu His

Gln Ala Gln Leu His Lys Asp Ala Leu Val Val Ile Lys Lys Gly Met 90 . 8.5

Asp Gln Pro Arg Pro Ser Asn Ser Ser 100

<210> 6

<211> 132 <212> PRT <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 6

Gly Ile Ser Ser Leu Gly Arg Lys Thr Pro Gly Pro Lys Asp Arg Ile

Val Met Glu Val Thr Leu Asn Lys Glu Pro Arg Val Gly Leu Gly Ile 20 25

Gly Ala Cys Cys Leu Ala Leu Glu Asn Ser Pro Pro Gly Ile Tyr Ile 40 45

His Ser Leu Ala Pro Gly Ser Val Ala Lys Met Glu Ser Asn Leu Ser Arg Gly Asp Gln Ile Leu Glu Val Asn Ser Val Asn Val Arg His Ala 65 70 75 80 Ala Leu Ser Lys Val His Ala Ile Leu Ser Lys Cys Pro Pro Gly Pro 90 Val Arg Leu Val Ile Gly Arg His Pro Asn Pro Lys Val Ser Glu Gln Glu Met Asp Glu Val Ile Ala Arg Ser Thr Tyr Gln Glu Ser Lys Glu 115 120 Ala Asn Ser Ser 130 <210> 7 <211> 101 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 7 Leu Gly Arg Ser Val Ala Val His Asp Ala Leu Cys Val Glu Val Leu 10 Lys Thr Ser Ala Gly Leu Gly Leu Ser Leu Asp Gly Gly Lys Ser Ser Val Thr Gly Asp Gly Pro Leu Val Ile Lys Arg Val Tyr Lys Gly Gly Ala Ala Glu Gln Ala Gly Ile Ile Glu Ala Gly Asp Glu Ile Leu Ala 55 Ile Asn Gly Lys Pro Leu Val Gly Leu Met His Phe Asp Ala Trp Asn 75

90

Ile Met Lys Ser Val Pro Glu Gly Pro Val Gln Leu Leu Ile Arg Lys

His Arg Asn Ser Ser 100

<210> 8

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 8

Arg Glu Glu Gly Gly Met Pro Gln Thr Val Ile Leu Pro Gly Pro Ala 1 5 10 15

Pro Trp Gly Phe Arg Leu Ser Gly Gly Ile Asp Phe Asn Gln Pro Leu 20 25 30

Val Ile Thr Arg Ile Thr Pro Gly Ser Lys Ala Ala Ala Asn Leu 35 40 45

Cys Pro Gly Asp Val Ile Leu Ala Ile Asp Gly Phe Gly Thr Glu Ser 50 60

Met Thr His Ala Asp Ala Gln Asp Arg Ile Lys Ala Ala Ala His Gln 65 70 75 80

Leu Cys Leu Lys Ile Asp Arg Gly Glu Thr His Leu Trp Ser Pro Asn 85 90 95

Ser Ser

<210> 9

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 9

Ile Leu Val Glu Val Gln Leu Ser Gly Gly Ala Pro Trp Gly Phe Thr 1  $\phantom{-}5\phantom{+}10\phantom{+}15\phantom{+}10\phantom{+}15\phantom{+}10$ 

Leu Lys Gly Gly Arg Glu His Gly Glu Pro Leu Val Ile Thr Lys Ile  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Glu Glu Gly Ser Lys Ala Ala Val Asp Lys Leu Leu Ala Gly Asp

35 40 45

Glu Ile Val Gly Ile Asn Asp Ile Gly Leu Ser Gly Phe Arg Gln Glu 50 60

Ala Ile Cys Leu Val Lys Gly Ser His Lys Thr Leu Lys Leu Val Val 65 70 75 80

Lys Arg Asn Ser Ser 85

<210> 10

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 10

Ser Val Gly His Val Arg Gly Pro Gly Pro Ser Val Gln His Thr 1 5 10 15

Leu Asn Gly Asp Ser Leu Thr Ser Gln Leu Thr Leu Leu Gly Gly Asn 20 25 30

Ala Arg Gly Ser Phe Val His Ser Val Lys Pro Gly Ser Leu Ala Glu 35 40 45

Lys Ala Gly Leu Arg Glu Gly His Gln Leu Leu Leu Glu Gly Cys 50 55 60

Ile Arg Gly Glu Arg Gln Ser Val Pro Leu Asp Thr Cys Thr Lys Glu 65 70 75 80

Glu Ala His Trp Thr Ile Gln Arg Cys Ser Gly Pro Val Thr Leu His 85 90 95

Tyr Lys Val Asn His Glu Gly Tyr Arg Lys 100 105

<210> 11

<211> 105

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 11

Arg Arg Pro Ala Arg Arg Ile Leu Ser Gln Val Thr Met Leu Ala Phe 1 10 15

Gln Gly Asp Ala Leu Leu Glu Gln Ile Ser Val Ile Gly Gly Asn Leu 20 25 30

Thr Gly Ile Phe Ile His Arg Val Thr Pro Gly Ser Ala Ala Asp Gln 35 40 45

Met Ala Leu Arg Pro Gly Thr Gln Ile Val Met Val Asp Tyr Glu Ala 50 55 60

Ser Glu Pro Leu Phe Lys Ala Val Leu Glu Asp Thr Thr Leu Glu Glu 65 70 75 80

Ala Val Gly Leu Leu Arg Arg Val Asp Gly Phe Cys Cys Leu Ser Val 85 90 95

Lys Val Asn Thr Asp Gly Tyr Lys Arg 100 105

<210> 12

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 12

Ile Leu Ser Gl<br/>n Val Thr Met Leu Ala Phe Gl<br/>n Gly Asp Ala Leu Leu 1 $\phantom{0}$ 5  $\phantom{0}$ 10  $\phantom{0}$ 15

Glu Gln Ile Ser Val Ile Gly Gly Asn Leu Thr Gly Ile Phe Ile His  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Arg Val Thr Pro Gly Ser Ala Ala Asp Gln Met Ala Leu Arg Pro Gly 35 40 45

Thr Gln Ile Val Met Val Asp Tyr Glu Ala Ser Glu Pro Leu Phe Lys 50 60

Ala Val Leu Glu Asp Thr Thr Leu Glu Glu Ala Val Gly Leu Leu Arg 70 75 80

Arg Val Asp Gly Phe Cys Cys Leu Ser Val Lys Val Asn Thr Asp Gly

85 90 95

Tyr Lys Arg Leu 100

<210> 13

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 13

Thr Arg Val Arg Leu Val Gln Phe Gln Lys Asn Thr Asp Glu Pro Met  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Ile Thr Leu Lys Met Asn Glu Leu Asn His Cys Ile Val Ala Arg 20 . 25 30

Ile Met His Gly Gly Met Ile His Arg Gln Gly Thr Leu His Val Gly 35 40 45

Asp Glu Ile Arg Glu Ile Asn Gly Ile Ser Val Ala Asn Gln Thr Val 50 55 60

Glu Gln Leu Gln Lys Met Leu Arg Glu Met Arg Gly Ser Ile Thr Phe 65 70 75 80

Lys Ile Val Pro Ser Tyr Arg Thr Gln Ser 85 90

<210> 14

<211> 88

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 14

Leu Glu Gln Lys Ala Val Leu Glu Gln Val Gln Leu Asp Ser Pro Leu 1 5 10 15

Gly Leu Glu Ile His Thr Thr Ser Asn Cys Gln His Phe Val Ser Gln 20 25 30

Val Asp Thr Gln Val Pro Thr Asp Ser Arg Leu Gln Ile Gln Pro Gly

35 40 45

Asp Glu Val Val Gln Ile Asn Glu Gln Val Val Gly Trp Pro Arg
50 55 60

Lys Asn Met Val Arg Glu Leu Leu Arg Glu Pro Ala Gly Leu Ser Leu 65 70 75 80

Val Leu Lys Lys Ile Pro Ile Pro 85

<210> 15

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 15

Gln Arg Lys Leu Val Thr Val Glu Lys Gln Asp Asn Glu Thr Phe Gly  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Phe Glu Ile Gln Ser Tyr Arg Pro Gln Asn Gln Asn Ala Cys Ser Ser 20 25 30

Glu Met Phe Thr Leu Ile Cys Lys Ile Gl<br/>n Glu Asp Ser Pro Ala His  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Cys Ala Gly Leu Gl<br/>n Ala Gly Asp Val Leu Ala As<br/>n Ile As<br/>n Gly Val $50 \ \ \,$  60

Ser Thr Glu Gly Phe Thr Tyr Lys Gln Val Val Asp Leu Ile Arg Ser 65 70 75 80

Ser Gly Asn Leu Leu Thr Ile Glu Thr Leu Asn Gly 85 90

<210> 16

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 16

Glu Gln Phe Cys Val Arg Ile Glu Lys Asn Pro Gly Leu Gly Phe Ser 20 25 30

Ile Ser Gly Gly Ile Ser Gly Gln Gly Asn Pro Phe Lys Pro Ser Asp 35 40 45

Lys Gly Ile Phe Val Thr Arg Val Gln Pro Asp Gly Pro Ala Ser Asn 50 60

Leu Leu Gln Pro Gly Asp Lys Ile Leu Gln Ala Asn Gly His Ser Phe 65 70 75 80

Val His Met Glu His Glu Lys Ala Val Leu Leu Leu Lys Ser Phe Gln 85 90 95

Asn Thr Val Asp Leu Val Ile Gln Arg Glu Leu Thr Val 100 105

<210> 17

<211> 97

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 17

Pro Thr Ser Pro Glu Ile Gln Glu Leu Arg Gln Met Leu Gln Ala Pro 1 5 10 15

His Phe Lys Gly Ala Thr Ile Lys Arg His Glu Met Thr Gly Asp Ile 20 25 30

Leu Val Ala Arg Ile Ile His Gly Gly Leu Ala Glu Arg Ser Gly Leu 35 40 45

Leu Tyr Ala Gly Asp Lys Leu Val Glu Val Asn Gly Val Ser Val Glu 50 55 60

Gly Leu Asp Pro Glu Gln Val Ile His Ile Leu Ala Met Ser Arg Gly 65 70 75 80

Thr Ile Met Phe Lys Val Val Pro Val Ser Asp Pro Pro Val Asn Ser 85 90 95

Ser

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<210> 18
<211> 141
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 18
Pro Thr Ser Pro Glu Ile Gln Glu Leu Arg Gln Met Leu Gln Ala Pro
               5
                                  10
His Phe Lys Ala Leu Leu Ser Ala His Asp Thr Ile Ala Gln Lys Asp
               25
Phe Glu Pro Leu Pro Pro Leu Pro Asp Asn Ile Pro Glu Ser Glu
Glu Ala Met Arg Iİe Val Cys Leu Val Lys Asn Gln Gln Pro Leu Gly
                       55
Ala Thr Ile Lys Arg His Glu Met Thr Gly Asp Ile Leu Val Ala Arg
                  70
                                      75
Ile Ile His Gly Gly Leu Ala Glu Arg Ser Gly Leu Leu Tyr Ala Gly
                                   90
Asp Lys Leu Val Glu Val Asn Gly Val Ser Val Glu Gly Leu Asp Pro
           100
                               105
Glu Gln Val Ile His Ile Leu Ala Met Ser Arg Gly Thr Ile Met Phe
       115
                           120
                                              125
```

Lys Val Val Pro Val Ser Asp Pro Pro Val Asn Ser Ser 130 135 140

<210> 19 <211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 19

Ile Gln Val Asn Gly Thr Asp Ala Asp Tyr Glu Tyr Glu Glu Ile Thr

Leu Glu Arg Gly Asn Ser Gly Leu Gly Phe Ser Ile Ala Gly Gly Thr
20 25 30

Asp Asn Pro His Ile Gly Asp Asp Ser Ser Ile Phe Ile Thr Lys Ile 35 .40 45

Ile Thr Gly Gly Ala Ala Ala Gln Asp Gly Arg Leu Arg Val Asn Asp 50 60

Cys Ile Leu Gln Val Asn Glu Val Asp Val Arg Asp Val Thr His Ser 70 75 80

Val Lys Arg Arg Asn 100

<210> 20

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

1

<223> Synthetic peptide

<400> 20

Ile Gln Leu Ile Lys Gly Pro Lys Gly Leu Gly Phe Ser Ile Ala Gly 1 5 10 15

Gly Val Gly Asn Gln His Ile Pro Gly Asp Asn Ser Ile Tyr Val Thr 20 25 30

Lys Ile Ile Glu Gly Gly Ala Ala His Lys Asp Gly Lys Leu Gln Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Gly Asp Lys Leu Leu Ala Val Asn Asn Val Cys Leu Glu Glu Val Thr 50 55 60

His Glu Glu Ala Val Thr Ala Leu Lys Asn Thr Ser Asp Phe Val Tyr 65 70 75 80

Leu Lys Val Ala Lys Pro Thr Ser Met Tyr Met Asn Asp Gly Asn 85 90 95

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<210> 21
<211> 203
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 21
Val Asn Gly Thr Asp Ala Asp Tyr Glu Tyr Glu Glu Ile Thr Leu Glu
                         10
Arg Gly Asn Ser Gly Leu Gly Phe Ser Ile Ala Gly Gly Thr Asp Asn
Pro His Ile Gly Asp Asp Ser Ser Ile Phe Ile Thr Lys Ile Ile Thr
                      40
Gly Gly Ala Ala Ala Gln Asp Gly Arg Leu Arg Val Asn Asp Cys Ile
                      55
Leu Gln Val Asn Glu Val Asp Val Arg Asp Val Thr His Ser Lys Ala
Val Glu Ala Leu Lys Glu Ala Gly Ser Ile Val Arg Leu Tyr Val Lys
Arg Arg Lys Pro Val Ser Glu Lys Ile Met Glu Ile Lys Leu Ile Lys
          100
                             105
Gly Pro Lys Gly Leu Gly Phe Ser Ile Ala Gly Gly Val Gly Asn Gln
       115
                         120
                                           125
His Ile Pro Gly Asp Asn Ser Ile Tyr Val Thr Lys Ile Ile Glu Gly
   130
                     135
                                        140
Gly Ala Ala His Lys Asp Gly Lys Leu Gln Ile Gly Asp Lys Leu Leu
              150
145
                                    155
Ala Val Asn Asn Val Cys Leu Glu Glu Val Thr His Glu Glu Ala Val
              165
Thr Ala Leu Lys Asn Thr Ser Asp Phe Val Tyr'Leu Lys Val Ala Lys
           180 185 190
```

Pro Thr Ser Met Tyr Met Asn Asp Gly Tyr Ala

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<210> 22
<211> 85
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 22
Ile Leu His Arg Gly Ser Thr Gly Leu Gly Phe Asn Ile Val Gly Gly
              5
                                  10
Glu Asp Gly Glu Gly Ile Phe Ile Ser Phe Ile Leu Ala Gly Gly Pro
           20
                              25
Ala Asp Leu Ser Gly Glu Leu Arg Lys Gly Asp Arg Ile Ile Ser Val
           40
Asn Ser Val Asp Leu Arg Ala Ala Ser His Glu Gln Ala Ala Ala Ala
                      55
Leu Lys Asn Ala Gly Gln Ala Val Thr Ile Val Ala Gln Tyr Arg Pro
            70
Glu Glu Tyr Ser Arg
<210> 23
<211> 110
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 23
Ile Glu Gly Arg Gly Ile Leu Glu Gly Glu Pro Arg Lys Val Val Leu
                                  10
His Lys Gly Ser Thr Gly Leu Gly Phe Asn Ile Val Gly Gly Glu Asp
                              25
Gly Glu Gly Ile Phe Val Ser Phe Ile Leu Ala Gly Gly Pro Ala Asp
```

Leu Ser Gly Glu Leu Gln Arg Gly Asp Gln Ile Leu Ser Val Asn Gly

Ile Asp Leu Arg Gly Ala Ser His Glu Gln Ala Ala Ala Ala Leu Lys 65 70 75 80

Gly Ala Gly Gln Thr Val Thr Ile Ile Ala Gln His Gln Pro Glu Asp  $85 \hspace{1.5cm} 90 \hspace{1.5cm} 95$ 

Tyr Ala Arg Phe Glu Ala Lys Ile His Asp Leu Asn Ser Ser 100 105 110

<210> 24

<211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 24

Ile Ser Tyr Val Asn Gly Thr Glu Ile Glu Tyr Glu Phe Glu Glu Ile 1 5 10 15

Thr Leu Glu Arg Gly Asn Ser Gly Leu Gly Phe Ser Ile Ala Gly Gly 20 25 30

Thr Asp Asn Pro His Ile Gly Asp Asp Pro Gly Ile Phe Ile Thr Lys 35 40 45

Ile Ile Pro Gly Gly Ala Ala Ala Glu Asp Gly Arg Leu Arg Val Asn 50 55 60

Asp Cys Ile Leu Arg Val Asn Glu Val Asp Val Ser Glu Val Ser His 65 70 75 80

Ser Lys Ala Val Glu Ala Leu Lys Glu Ala Gly Ser Ile Val Arg Leu 85 90 95

Tyr Val Arg Arg Arg 100

<210> 25

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 25

Ile Pro Ile Leu Glu Thr Val Val Glu Ile Lys Leu Phe Lys Gly Pro

1

Lys Gly Leu Gly Phe Ser Ile Ala Gly Gly Val Gly Asn Gln His Ile 20 25 30

Pro Gly Asp Asn Ser Ile Tyr Val Thr Lys Ile Ile Asp Gly Gly Ala 35 40 45

Ala Gln Lys Asp Gly Arg Leu Gln Val Gly Asp Arg Leu Leu Met Val 50 55 60

Asn Asn Tyr Ser Leu Glu Glu Val Thr His Glu Glu Ala Val Ala Ile 65 70 75 80

Leu Lys Asn Thr Ser Glu Val Val Tyr Leu Lys Val Gly Lys Pro Thr 85 90 95

Thr Ile Tyr Met Thr Asp Pro Tyr Gly Pro Pro Asn Ser Ser Leu Thr 100 105 110

Asp

<210> 26

<211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 26

Gly Ile Pro Tyr Val Glu Glu Pro Arg His Val Lys Val Gln Lys Gly
1 10 15

Ser Glu Pro Leu Gly Ile Ser Ile Val Ser Gly Glu Lys Gly Gly Ile 20 25 30

Tyr Val Ser Lys Val Thr Val Gly Ser Ile Ala His Gln Ala Gly Leu  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Glu Tyr Gly Asp Gln Leu Leu Glu Phe Asn Gly Ile Asn Leu Arg Ser 50 55 60

Ala Thr Glu Gln Gln Ala Arg Leu Ile Ile Gly Gln Gln Cys Asp Thr 65 70 75 80

Ile Thr Ile Leu Ala Gln Tyr Asn Pro His Val His Gln Leu Arg Asn 85 90 95

Ser Ser Leu Thr Asp 100

<210> 27

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 27

Gly Ile Leu Ala Gly Asp Ala Asn Lys Lys Thr Leu Glu Pro Arg.Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Val Phe Ile Lys Lys Ser Gln Leu Glu Leu Gly Val His Leu Cys Gly 20 25 30

Gly Asn Leu His Gly Val Phe Val Ala Glu Val Glu Asp Asp Ser Pro  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ala Lys Gly Pro Asp Gly Leu Val Pro Gly Asp Leu Ile Leu Glu Tyr 50 55 60

Gly Ser Leu Asp Val Arg Asn Lys Thr Val Glu Glu Val Tyr Val Glu 65 · 70 75 80

Met Leu Lys Pro Arg Asp Gly Val Arg Leu Lys Val Gln Tyr Arg Pro 85 90 95

Glu Glu Phe Ile Val Thr Asp 100

<210> 28

<211> 93

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 28

Leu Asn Ile Val Thr Val Thr Leu Asn Met Glu Arg His His Phe Leu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Gly Ile Ser Ile Val Gly Gln Ser Asn Asp Arg Gly Asp Gly Gly Ile

20 25 30

Tyr Ile Gly Ser Ile Met Lys Gly Gly Ala Val Ala Ala Asp Gly Arg 35 40 45

Ile Glu Pro Gly Asp Met Leu Leu Gln Val Asn Asp Val Asn Phe Glu 50 55 60

Asn Met Ser Asn Asp Asp Ala Val Arg Val Leu Arg Glu Ile Val Ser 65 70 75 80

Gln Thr Gly Pro Ile Ser Leu Thr Val Ala Lys Cys Trp 85 90

<210> 29

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 29

Leu Asn Ile Ile Thr Val Thr Leu Asn Met Glu Lys Tyr Asn Phe Leu 1 5 10 15

Gly Ile Ser Ile Val Gly Gln Ser Asn Glu Arg Gly Asp Gly Ile 20 25 30

Tyr Ile Gly Ser Ile Met Lys Gly Gly Ala Val Ala Ala Asp Gly Arg 35 40 45

Ile Glu Pro Gly Asp Met Leu Leu Gln Val Asn Asp Met Asn Phe Glu 50 60

Asn Met Ser Asn Asp Asp Ala Val Arg Val Leu Arg Asp Ile Val His 65 70 75 80

Lys Pro Gly Pro Ile Val Leu Thr Val Ala Lys Cys Trp Asp Pro Ser 85 90 95

Pro Gln Asn Ser 100

<210> 30

<211> 95

<212> PRT

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<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 30
Ile Ile Thr Val Thr Leu Asn Met Glu Lys Tyr Asn Phe Leu Gly Ile
               5
                                   10
Ser Ile Val Gly Gln Ser Asn Glu Arg Gly Asp Gly Ile Tyr Ile
           20
                               25
                                                  30
Gly Ser Ile Met Lys Gly Gly Ala Val Ala Ala Asp Gly Arg Ile Glu
                           40
Pro Gly Asp Met Leu Leu Gln Val Asn Glu Ile Asn Phe Glu Asn Met
                       55
Ser Asn Asp Asp Ala Val Arg Val Leu Arg Glu Ile Val His Lys Pro
            70
Gly Pro Ile Thr Leu Thr Val Ala Lys Cys Trp Asp Pro Ser Pro
                                90
<210> 31
<211> 98
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 31
Gln Gln Arg Glu Leu Arg Pro Arg Leu Cys Thr Met Lys Lys Gly Pro
                               10
Ser Gly Tyr Gly Phe Asn Leu His Ser Asp Lys Ser Lys Pro Gly Gln
                               25
Phe Ile Arg Ser Val Asp Pro Asp Ser Pro Ala Glu Ala Ser Gly Leu
Arg Ala Gln Asp Arg Ile Val Glu Val Asn Gly Val Cys Met Glu Gly
```

75

Lys Gln His Gly Asp Val Val Ser Ala Ile Arg Ala Gly Gly Asp Glu

Thr Lys Leu Leu Val Val Asp Arg Glu Thr Asp Glu Phe Phe Lys Asn 85 90 95

Ser Ser

<210> 32

<211> 155

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 32

Gly Ile Gln Met Ser Ala Asp Ala Ala Ala Gly Ala Pro Leu Pro Arg

5 10 15

Leu Cys Cys Leu Glu Lys Gly Pro Asn Gly Tyr Gly Phe His Leu His 20 25 30

Gly Glu Lys Gly Lys Leu Gly Gln Tyr Ile Arg Leu Val Glu Pro Gly 35 40 45

Ser Pro Ala Glu Lys Ala Gly Leu Leu Ala Gly Asp Arg Leu Val Glu 50 . 60

Val Asn Gly Glu Asn Val Glu Lys Glu Thr His Gln Gln Val Val Ser 65 70 75 80

Arg Ile Arg Ala Ala Leu Asn Ala Val Arg Leu Leu Val Val Asp Pro 85 90 95

Glu Thr Asp Glu Gln Leu Gln Lys Leu Gly Val Gln Val Arg Glu Glu 100 105 110

Leu Leu Arg Ala Gln Glu Ala Pro Gly Gln Ala Glu Pro Pro Ala Ala 115 120 125

Ala Glu Val Gln Gly Ala Gly Asn Glu Asn Glu Pro Arg Glu Ala Asp 130 135 140

Lys Ser His Pro Glu Gln Arg Glu Leu Arg Asn 145 150 155

<210> 33 <211> 243 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 33 55

130

Gly Ile Gln Met Ser Ala Asp Ala Ala Ala Gly Ala Pro Leu Pro Arg 10 Leu Cys Cys Leu Glu Lys Gly Pro Asn Gly Tyr Gly Phe His Leu His Gly Glu Lys Gly Lys Leu Gly Gln Tyr Ile Arg Leu Val Glu Pro Gly Ser Pro Ala Glu Lys Ala Gly Leu Leu Ala Gly Asp Arg Leu Val Glu Val Asn Gly Glu Asn Val Glu Lys Glu Thr His Gln Gln Val Val Ser Arg Ile Arg Ala Ala Leu Asn Ala Val Arg Leu Leu Val Val Asp Pro Glu Thr Asp Glu Gln Leu Gln Lys Leu Gly Val Gln Val Arg Glu Glu 100 105

Leu Leu Arg Ala Gln Glu Ala Pro Gly Gln Ala Glu Pro Pro Ala Ala 115 120 125 Ala Glu Val Gln Gly Ala Gly Asn Glu Asn Glu Pro Arg Glu Ala Asp

140

135

Lys Ser His Pro Glu Gln Arg Glu Leu Arg Pro Arg Leu Cys Thr Met 145

Lys Lys Gly Pro Ser Gly Tyr Gly Phe Asn Leu His Ser Asp Lys Ser

Lys Pro Gly Gln Phe Ile Arg Ser Val Asp Pro Asp Ser Pro Ala Glu 180 185 190

Ala Ser Gly Leu Arg Ala Gln Asp Arg Ile Val Glu Val Asn Gly Val 195 200 205

Cys Met Glu Gly Lys Gln His Gly Asp Val Val Ser Ala Ile Arg Ala 215 Gly Gly Asp Glu Thr Lys Leu Leu Val Val Asp Arg Glu Thr Asp Glu 230 235 Phe Phe Lys <210> 34 <211> 155 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 34 Gln Met Ser Ala Asp Ala Ala Ala Gly Ala Pro Leu Pro Arg Leu Cys Cys Leu Glu Lys Gly Pro Asn Gly Tyr Gly Phe His Leu His Gly Glu 2.0 25 Lys Gly Lys Leu Gly Gln Tyr Ile Arg Leu Val Glu Pro Gly Ser Pro Ala Glu Lys Ala Gly Leu Leu Ala Gly Asp Arg Leu Val Glu Val Asn Gly Glu Asn Val Glu Lys Glu Thr His Gln Gln Val Val Ser Arg Ile 70 Arg Ala Ala Leu Asn Ala Val Arg Leu Val Val Asp Pro Glu Thr 85 90 Asp Glu Gln Leu Gln Lys Leu Gly Val Gln Val Arg Glu Glu Leu Leu 100 105 110 Arg Ala Glu Ala Pro Gly Gln Ala Glu Pro Pro Ala Ala Ala Glu 115 120 Val Gln Gly Ala Gly Asn Glu Asn Glu Pro Arg Glu Ala Asp Lys Ser 130 His Pro Glu Gln Arg Glu Leu Arg Asn Ser Ser

145

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<210> 35
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<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 35

Leu Thr Thr Gln Gln Ile Asp Leu Gln Gly Pro Gly Pro Trp Gly Phe 1 5 10 15

Arg Leu Val Gly Gly Lys Asp Phe Glu Gln Pro Leu Ala Ile Ser Arg 20 25 30

Val Thr Pro Gly Ser Lys Ala Ala Leu Ala Asn Leu Cys Ile Gly Asp  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Val Ile Thr Ala Ile Asp Gly Glu Asn Thr Ser Asn Met Thr His Leu 50 55 60

Glu Ala Gln Asn Arg Ile Lys Gly Cys Thr Asp Asn Leu Thr Leu Thr 65 70 75 80

Val Ala Arg Ser Glu His Lys Val Trp Ser Pro Leu Val Thr Asn Ser 85 90 95

Ser Trp

<210> 36

<211> 89

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 36

Ile Phe Met Asp Ser Phe Lys Val Val Leu Glu Gly Pro Ala Pro Trp  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Phe Arg Leu Gln Gly Gly Lys Asp Phe Asn Val Pro Leu Ser Ile 20 25 30

Ser Arg Leu Thr Pro Gly Gly Lys Ala Ala Gln Ala Gly Val Ala Val 35 40 45

Gly Asp Trp Val Leu Ser Ile Asp Gly Glu Asn Ala Gly Ser Leu Thr 50 60

His Ile Glu Ala Gln Asn Lys Ile Arg Ala Cys Gly Glu Arg Leu Ser 65 70 75 80

Leu Gly Leu Ser Arg Ala Gln Pro Val 85

<210> 37

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 37

Gln Gly His Glu Leu Ala Lys Gln Glu Ile Arg Val Arg Val Glu Lys  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Asp Pro Glu Leu Gly Phe Ser Ile Ser Gly Gly Val Gly Gly Arg Gly 20 25 30

Asn Pro Phe Arg Pro Asp Asp Gly Ile Phe Val Thr Arg Val Gln 35 40 45

Pro Glu Gly Pro Ala Ser Lys Leu Leu Gln Pro Gly Asp Lys Ile Ile 50 55 60

Gln Ala Asn Gly Tyr Ser Phe Ile Asn Ile Glu His Gly Gln Ala Val 65 70 75 80

Ser Leu Leu Lys Thr Phe Gln Asn Thr Val Glu Leu Ile Ile Val Arg 85 90 95

Glu Val Ser Ser 100

<210> 38

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 38

Lys Asn Pro Ser Gly Glu Leu Lys Thr Val Thr Leu Ser Lys Met Lys 5 Gln Ser Leu Gly Ile Ser Ile Ser Gly Gly Ile Glu Ser Lys Val Gln 25 30 Pro Met Val Lys Ile Glu Lys Ile Phe Pro Gly Gly Ala Ala Phe Leu 35 40 4.5 Ser Gly Ala Leu Gln Ala Gly Phe Glu Leu Val Ala Val Asp Gly Glu 50 55 Asn Leu Glu Gln Val Thr His Gln Arg Ala Val Asp Thr Ile Arg Arg Ala Tyr Arg Asn Lys Ala Arg Glu Pro Met Glu Leu Val Val Arg Val 85 90 Pro Gly Pro Ser Pro Arg Pro Ser Pro Ser Asp 100 <210> 39 <211> 97 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 39 Glu Gly His Ser His Pro Arg Val Val Glu Leu Pro Lys Thr Glu Glu 10 Gly Leu Gly Phe Asn Ile Met Gly Gly Lys Glu Gln Asn Ser Pro Ile 25 Tyr Ile Ser Arg Ile Ile Pro Gly Gly Ile Ala Asp Arg His Gly Gly Leu Lys Arg Gly Asp Gln Leu Leu Ser Val Asn Gly Val Ser Val Glu Gly Glu His His Glu Lys Ala Val Glu Leu Leu Lys Ala Ala Gln Gly 75 Lys Val Lys Leu Val Val Arg Tyr Thr Pro Lys Val Leu Glu Met 85 90 95

Glu

<210> 40 <211> 88 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 40 Pro Gly Ala Pro Tyr Ala Arg Lys Thr Phe Thr Ile Val Gly Asp Ala Val Gly Trp Gly Phe Val Val Arg Gly Ser Lys Pro Cys His Ile Gln 25 Ala Val Asp Pro Ser Gly Pro Ala Ala Ala Ala Gly Met Lys Val Cys 40 ·Gln Phe Val Val Ser Val Asn Gly Leu Asn Val Leu His Val Asp Tyr Arg Thr Val Ser Asn Leu Ile Leu Thr Gly Pro Arg Thr Ile Val Met Glu Val Met Glu Glu Leu Glu Cys 85 <210> 41 <211> 97 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 41 Gly Gln Tyr Gly Glu Thr Val Lys Ile Val Arg Ile Glu Lys Ala . 5 Arg Asp Ile Pro Leu Gly Ala Thr Val Arg Asn Glu Met Asp Ser Val 20

Ile Ile Ser Arg Ile Val Lys Gly Gly Ala Ala Glu Lys Ser Gly Leu

Leu His Glu Gly Asp Glu Val Leu Glu Ile Asn Gly Ile Glu Ile Arg 50 55 60

Gly Lys Asp Val Asn Glu Val Phe Asp Leu Leu Ser Asp Met His Gly 65 70 75 80

Thr Leu Thr Phe Val Leu Ile Pro Ser Gln Gln Ile Lys Pro Pro Pro 85 90 95

Ala

<210> 42

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 42

Lys Pro Ser Gln Ala Ser Gly His Phe Ser Val Glu Leu Val Arg Gly  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Tyr Ala Gly Phe Gly Leu Thr Leu Gly Gly Gly Arg Asp Val Ala Gly 20 25 30

Asp Thr Pro Leu Ala Val Arg Gly Leu Leu Lys Asp Gly Pro Ala Gln 35 40 45

Arg Cys Gly Arg Leu Glu Val Gly Asp Leu Val Leu His Ile Asn Gly 50 55 60

Glu Ser Thr Gln Gly Leu Thr His Ala Gln Ala Val Glu Arg Ile Arg 65 70 75 80

Ala Gly Gly Pro Gln Leu His Leu Val Ile Arg Arg Pro Leu Glu Thr 85 90 95

His Pro Gly Lys Pro Arg Gly Val 100

<210> 43

<211> 101

<212> PRT

<213> Artificial Sequence

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<220>
<223> Synthetic peptide
<400> 43
Pro Val Met Ser Gln Cys Ala Cys Leu Glu Glu Val His Leu Pro Asn
              5
Ile Lys Pro Gly Glu Gly Leu Gly Met Tyr Ile Lys Ser Thr Tyr Asp
                             25
           20
Gly Leu His Val Ile Thr Gly Thr Thr Glu Asn Ser Pro Ala Asp Arg
       35
                         40
Ser Gln Lys Ile His Ala Gly Asp Glu Val Thr Gln Val Asn Gln Gln
   50 55
Thr Val Val Gly Trp Gln Leu Lys Asn Leu Val Lys Lys Leu Arg Glu
         70 75
Asn Pro Thr Gly Val Val Leu Leu Lys Lys Arg Pro Thr Gly Ser
                    90
Phe Asn Phe Thr Pro
          100
<210> 44
<211> 97
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 44
Ile Asp Asp Glu Glu Asp Ser Val Lys Ile Ile Arg Leu Val Lys Asn
Arg Glu Pro Leu Gly Ala Thr Ile Lys Lys Asp Glu Gln Thr Gly Ala
Ile Ile Val Ala Arg Ile Met Arg Gly Gly Ala Ala Asp Arg Ser Gly
                       40
Leu Ile His Val Gly Asp Glu Leu Arg Glu Val Asn Gly Ile Pro Val
```

75

Glu Asp Lys Arg Pro Glu Glu Ile Ile Gln Ile Leu Ala Gln Ser Gln

55

Gly Ala Ile Thr Phe Lys Ile Ile Pro Gly Ser Lys Glu Glu Thr Pro  $85 \hspace{1.5cm} 90 \hspace{1.5cm} 95$ 

Ser

<210> 45

<211> 452

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 45

Met Gly Ser Ser Gln Ser Val Glu Ile Pro Gly Gly Gly Thr Glu Gly 1 5 10 15

Tyr His Val Leu Arg Val Gln Glu Asn Ser Pro Gly His Arg Ala Gly 20 25 30

Leu Glu Pro Phe Phe Asp Phe Ile Val Ser Ile Asn Gly Ser Arg Leu 35 40 45

Asn Lys Asp Asn Asp Thr Leu Lys Asp Leu Leu Lys Ala Asn Val Glu 50 55 60

Lys Pro Val Lys Met Leu Ile Tyr Ser Ser Lys Thr Leu Glu Leu Arg 65 70 75 80

Glu Thr Ser Val Thr Pro Ser Asn Leu Trp Gly Gly Gln Gly Leu Leu 85 90 95

Gly Val Ser Ile Arg Phe Cys Ser Phe Asp Gly Ala Asn Glu Asn Val 100 105 110

Trp His Val Leu Glu Val Glu Ser Asn Ser Pro Ala Ala Leu Ala Gly 115 120 125

Leu Arg Pro His Ser Asp Tyr Ile Ile Gly Ala Asp Thr Val Met Asn 130 135 140

Glu Ser Glu Asp Leu Phe Ser Leu Ile Glu Thr His Glu Ala Lys Pro 145 150 155 160

Leu	Lys	Leu	Tyr	Val 165	Tyr	Asn	Thr	Asp	Thr 170	Asp	Asn	Cys	Arg	Glu 175	Val
Ile	Ile	Thr	Pro 180	Asn	Ser	Ala	Trp	Gly 185	Gly	Glu	Gly	Ser	Leu 190	Gly	Cys
Gly	Ile	Gly 195	Tyr	Gly	Tyr	Leu	His 200	Arg	Ile	Pro	Thr	Arg 205	Pro	Phe	Glu
Glu	Gly 210	Lys	Lys	Ile	Ser	Leu 215	Pro	Gly	Gln	Met	Ala 220	Gly	Thr	Pro	Ile
Thr	Pro	Leu	Lys	Asp	Gly	Phe	Thr	Glu	Val	Gln	Leu	Ser	Ser	Val	Asn
225					230					235					240
Pro	Pro	Ser	Leu	Ser 245	Pro	Pro	Gly	Thr	Thr 250	Gly	Ile	Glu	Gln	Ser 255	Leu
Thr	Gly	Leu	Ser 260	Ile	Ser	Ser	Thr	Pro 265	Pro	Ala	Val	Ser	Ser 270	Val	Leu
Ser	Thr	Gly 275	Val	Pro	Thr	Val	Pro 280	Leu	Leu	Pro	Pro	Gln 285	Val	Asn	Gln
Ser	Leu 290	Thr	Ser	Val	Pro	Pro 295	Met	Asn	Pro	Ala	Thr 300	Thr	Leu	Pro	Gly
Leu 305	Met	Pro	Leu	Pro	Ala 310	Gly	Leu	Pro	Asn	Leu 315	Pro	Asn	Leu	Asn	Leu 320
Asn	Leu	Pro	Ala	Pro 325	His	Ile	Met	Pro	Gly 330	Val	Gly	Leu	Pro	Glu 335	Leu
Val	Asn	Pro	Gly 340	Leu	Pro	Pro	Leu	Pro 345	Ser	Met	Pro	Pro	Arg 350	Asn	Leu
Pro	Gly	Ile 355	Ala	Pro	Leu	Pro	Leu 360	Pro	Ser	Glu	Phe	Leu 365	Pro	Ser	Phe
Pro	Leu 370	Val	Pro	Glu	Ser	Ser 375	Ser	Ala	Ala	Ser	Ser 380	Gly	Glu	Leu	Leu
Ser 385	Ser	Leu	Pro	Pro	Thr 390	Ser	Asn	Ala	Pro	Ser 395	Asp	Pro	Ala	Thr	Thr 400

Pro Thr Ala Lys Ala Pro Thr Thr Val Glu Asp Arg Val Gly Asp Ser 420 425 430

Thr Pro Val Ser Glu Lys Pro Val Ser Ala Ala Val Asp Ala Asn Ala 435 440 445

Ser Glu Ser Pro 450

<210> 46

<211> 97

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 46

Asn Glu Asn Val Trp His Val Leu Glu Val Glu Ser Asn Ser Pro Ala 1 5 10 15

Ala Leu Ala Gly Leu Arg Pro His Ser Asp Tyr Ile Ile Gly Ala Asp 20 25 30

Thr Val Met Asn Glu Ser Glu Asp Leu Phe Ser Leu Ile Glu Thr His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Glu Ala Lys Pro Leu Lys Leu Tyr Val Tyr Asn Thr Asp Thr Asp Asn 50 60

Cys Arg Glu Val Ile Ile Thr Pro Asn Ser Ala Trp Gly Gly Glu Gly 65 70 75 80

Ser Leu Gly Cys Gly Ile Gly Tyr Gly Tyr Leu His Arg Ile Pro Thr  $85 \hspace{1.5cm} 90 \hspace{1.5cm} 95$ 

Arg

<210> 47

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 47

Met Gly Ser Ser Gln Ser Val Glu Ile Pro Gly Gly Gly Thr Glu Gly
1 10 15

Tyr His Val Leu Arg Val Gln Glu Asn Ser Pro Gly His Arg Ala Gly 20 25 30

Leu Glu Pro Phe Phe Asp Phe Ile Val Ser Ile Asn Gly Ser Arg Leu 35 40 45

Asn Lys Asp Asn Asp Thr Leu Lys Asp Leu Leu Lys Ala Asn Val Glu 50 55 . 60

Lys Pro Val Lys Met Leu Ile Tyr Ser Ser Lys Thr Leu Glu Leu Arg 65 70 75 80

Glu Thr Ser Val Thr Pro Ser Asn Leu Trp Gly Gly Gln Gly Leu Leu 85 90 95

Gly Val Ser Ile Arg Phe Cys Ser Phe Asp Gly Ala Asn Glu  $100 \hspace{1.5cm} 105 \hspace{1.5cm} 110$ 

<210> 48

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 48

Arg Ala Ser Glu Gln Val Trp His Val Leu Asp Val Glu Pro Ser Ser  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Pro Ala Ala Leu Ala Gly Leu Arg Pro Tyr Thr Asp Tyr Val Val Gly 20 . 25 . 30

Ser Asp Gln Ile Leu Gln Glu Ser Glu Asp Phe Phe Thr Leu Ile Glu 35 40 45

Ser His Glu Gly Lys Pro Leu Lys Leu Met Val Tyr Asn Ser Lys Ser 50 60

Asp Ser Cys Arg Glu Val Thr Val Thr Pro Asn Ala Ala Trp Gly Gly 65 70 75 80

Glu Gly Ser Leu Gly Cys Gly Ile Gly Tyr Gly Tyr Leu His Arg Ile 85 90 95

Pro Thr Gln

<210> 49

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 49

Met Gly Leu Gly Val Ser Ala Glu Gln Pro Ala Gly Gly Ala Glu Gly 1 5 10 15

Phe His Leu His Gly Val Gln Glu Asn Ser Pro Ala Gln Gln Ala Gly 20 25 30

Leu Glu Pro Tyr Phe Asp Phe Ile Ile Thr Ile Gly His Ser Arg Leu 35 40 45

Asn Lys Glu Asn Asp Thr Leu Lys Ala Leu Leu Lys Ala Asn Val Glu 50 55 60

Lys Pro Val Lys Leu Glu Val Phe Asn Met Lys Thr Met Arg Val Arg 65 70 75 80

Glu Val Glu Val Pro Ser Asn Met Trp Gly Gly Gln Gly Leu Leu 85 90 95

<210> 50

<211> 440

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 50

Met Gly Leu Gly Val Ser Ala Glu Gln Pro Ala Gly Gly Ala Glu Gly 1 5 10 15

Phe His Leu His Gly Val Gln Glu Asn Ser Pro Ala Gln Gln Ala Gly

30

Leu	Glu	Pro 35	Tyr	Phe	Asp	Phe	Ile 40	Ile	Thr	Ile	Gly	His 45	Ser	Arg	Leu
Asn	Lys 50	Glu	Asn	Asp	Thr	Leu 55	Lys	Ala	Leu	Leu	Lys 60	Ala	Asn	Val	Glu

25

- Lys Pro Val Lys Leu Glu Val Phe Asn Met Lys Thr Met Arg Val Arg 65 70 75 80
- Glu Val Glu Val Pro Ser Asn Met Trp Gly Gly Gln Gly Leu Leu 85 90 95
- Gly Ala Ser Val Arg Phe Cys Ser Phe Arg Arg Ala Ser Glu Gln Val 100 105 110
- Trp His Val Leu Asp Val Glu Pro Ser Ser Pro Ala Ala Leu Ala Gly
  115 120 125
- Leu Arg Pro Tyr Thr Asp Tyr Val Val Gly Ser Asp Gln Ile Leu Gln 130 135 140
- Glu Ser Glu Asp Phe Phe Thr Leu Ile Glu Ser His Glu Gly Lys Pro 145 150 155 160
- Leu Lys Leu Met Val Tyr Asn Ser Lys Ser Asp Ser Cys Arg Glu Val 165 170 175
- Thr Val Thr Pro Asn Ala Ala Trp Gly Gly Glu Gly Ser Leu Gly Cys 180 185 190
- Gly Ile Gly Tyr Gly Tyr Leu His Arg Ile Pro Thr Gln Pro Pro Ser 195 200 205
- Tyr His Lys Lys Pro Pro Gly Thr Pro Pro Pro Ser Ala Leu Pro Leu 210 215 220
- Gly Ala Pro Pro Pro Asp Ala Leu Pro Pro Gly Pro Thr Pro Glu Asp 225 230 235 240
- Ser Pro Ser Leu Glu Thr Gly Ser Arg Gln Ser Asp Tyr Met Glu Ala 245 250 255
- Leu Leu Gln Ala Pro Gly Ser Ser Met Glu Asp Pro Leu Pro Gly Pro 260 265 270

Gly Ser Pro Ser His Ser Ala Pro Asp Pro Asp Gly Leu Pro His Phe 280 Met Glu Thr Pro Leu Gln Pro Pro Pro Pro Val Gln Arg Val Met Asp 290 295 300 Pro Gly Phe Leu Asp Val Ser Gly Ile Ser Leu Leu Asp Asn Ser Asn 310 315 Ala Ser Val Trp Pro Ser Leu Pro Ser Ser Thr Glu Leu Thr Thr 325 330 Ala Val Ser Thr Ser Gly Pro Glu Asp Ile Cys Ser Ser Ser Ser Ser 345 His Glu Arg Gly Glu Ala Thr Trp Ser Gly Ser Glu Phe Glu Val 360 Ser Phe Leu Asp Ser Pro Gly Ala Gln Ala Gln Ala Asp His Leu Pro Gln Leu Thr Leu Pro Asp Ser Leu Thr Ser Ala Ala Ser Pro Glu Asp 390 395 Gly Leu Ser Ala Glu Leu Leu Glu Ala Gln Ala Glu Glu Glu Pro Ala 405 410 Ser Thr Glu Gly Leu Asp Thr Gly Thr Glu Ala Glu Gly Leu Asp Ser 420 425 Gln Ala Gln Ile Ser Thr Thr Glu 435 440 <210> 51 <211> 90 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 51 Ile Tyr Thr Val Glu Leu Lys Arg Tyr Gly Gly Pro Leu Gly Ile Thr 10

Ile Ser Gly Thr Glu Glu Pro Phe Asp Pro Ile Ile Ser Ser Leu

20 25 30

Thr Lys Gly Gly Leu Ala Glu Arg Thr Gly Ala Ile His Ile Gly Asp 35 40 45

Arg Ile Leu Ala Ile Asn Ser Ser Ser Leu Lys Gly Lys Pro Leu Ser 50 55 60

Glu Ala Ile His Leu Leu Gln Met Ala Gly Glu Thr Val Thr Leu Lys 65 70 75 80

Ile Lys Lys Gln Thr Asp Ala Gln Ser Ala 85 90

<210> 52

<211> 83

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 52

Val Val Glu Leu Met Lys Lys Glu Gly Thr Thr Leu Gly Leu Thr Val

5 10 15

Ser Gly Gly Ile Asp Lys Asp Gly Lys Pro Arg Val Ser Asn Leu Arg 20 25 30

Gln Gly Gly Ile Ala Ala Arg Ser Asp Gln Leu Asp Val Gly Asp Tyr 35 40 45

Ile Lys Ala Val Asn Gly Ile Asn Leu Ala Lys Phe Arg His Asp Glu 50 55 60

Ile Ile Ser Leu Leu Lys Asn Val Gly Glu Arg Val Val Leu Glu Val 65 70 75 80

Glu Tyr Glu

<210> 53

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 53

His Val Ala Thr Ala Ser Gly Pro Leu Leu Val Glu Val Ala Lys Thr  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Pro Gly Ala Ser Leu Gly Val Ala Leu Thr Thr Ser Met Cys Cys Asn 20 25 30

Lys Gln Val Ile Val Ile Asp Lys Ile Lys Ser Ala Ser Ile Ala Asp  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Arg Cys Gly Ala Leu His Val Gly Asp His Ile Leu Ser Ile Asp Gly 50 55 60

Thr Ser Met Glu Tyr Cys Thr Leu Ala Glu Ala Thr Gln Phe Leu Ala 65 70 75 80

Asn Thr Thr Asp Gln Val Lys Leu Glu Ile Leu Pro His His Gln Thr 85 90 95

Arg Leu Ala Leu Lys Gly Pro Asn Ser Ser 100 105

<210> 54

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 54

Ile Met Ser Pro Thr Pro Val Glu Leu His Lys Val Thr Leu Tyr Lys 1 5 10 15

Asp Ser Asp Met Glu Asp Phe Gly Phe Ser Val Ala Asp Gly Leu Leu 20 25 30

Glu Lys Gly Val Tyr Val Lys Asn Ile Arg Pro Ala Gly Pro Gly Asp 35 40 45

Leu Gly Gly Leu Lys Pro Tyr Asp Arg Leu Leu Gln Val Asn His Val 50 55 60

Arg Thr Arg Asp Phe Asp Cys Cys Leu Val Val Pro Leu Ile Ala Glu 65 70 75 80

	85	90		95
<210> 55 <211> 90 <212> PRT <213> Artifici	al Sequence			
<220> <223> Synthetic peptide				
<400> 55				
Ile Tyr Thr Val	Glu Leu Lys 5	Arg Tyr Gly G 10	Gly Pro Leu Gly	Ile Thr 15
Ile Ser Gly Thr 20	Glu Glu Pro	Phe Asp Pro I 25	The Ile Ile Ser	Ser Leu
Thr Lys Gly Gly 35	Leu Ala Glu	Arg Thr Gly A	ala Ile His Ile 45	Gly Asp
Arg Ile Leu Ala 50	Ile Asn Ser 55	Ser Ser Leu L	Lys Gly Lys Pro 60	Leu Ser
Glu Ala Ile His 65	Leu Leu Gln 70		Glu Thr Val Thr	Leu Lys 80
Ile Lys Lys Gln	Thr Asp Ala 85	Gln Ser Ala 90		
<210> 56 <211> 95 <212> PRT <213> Artificial Sequence				
<220> <223> Synthetic peptide				
<400> 56				
Ile Met Ser Pro 1	Thr Pro Val 5	Glu Leu His L 10	ys Val Thr Leu	Tyr Lys 15
Asp Ser Asp Met	Glu Asp Phe	Gly Phe Ser V 25	al Ala Asp Gly 30	Leu Leu
Glu Lys Gly Val 35	Tyr Val Lys	Asn Ile Arg P	Pro Ala Gly Pro 45	Gly Asp

Ser Gly Asn Lys Leu Asp Leu Val Ile Ser Arg Asn Pro Leu Ala

Leu Gly Gly Leu Lys Pro Tyr Asp Arg Leu Leu Gln Val Asn His Val 50 55 60

Arg Thr Arg Asp Phe Asp Cys Cys Leu Val Val Pro Leu Ile Ala Glu 65 70 75 80

Ser Gly Asn Lys Leu Asp Leu Val Ile Ser Arg Asn Pro Leu Ala 85 90 95

<210> 57

<211> 88

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 57

Ser Arg Gly Cys Glu Thr Arg Glu Leu Ala Leu Pro Arg Asp Gly Gln  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Arg Leu Gly Phe Glu Val Asp Ala Glu Gly Phe Val Thr His Val 20 25 30

Glu Arg Phe Thr Phe Ala Glu Thr Ala Gly Leu Arg Pro Gly Ala Arg 35 40 45

Leu Leu Arg Val Cys Gly Gln Thr Leu Pro Ser Leu Arg Pro Glu Ala 50 60

Ala Ala Gln Leu Leu Arg Ser Ala Pro Lys Val Cys Val Thr Val Leu 65 70 75 80

Pro Pro Asp Glu Ser Gly Arg Pro 85

<210> 58

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 58

Leu Glu Asp Gly Gln Glu Leu Asp Ser Trp Tyr Val Ile Leu Asn Gly

20 25 30

Thr Val Glu Ile Ser His Pro Asp Gly Lys Val Glu Asn Leu Phe Met  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Gly Asn Ser Phe Gly Ile Thr Pro Thr Leu Asp Lys Gln Tyr Met His 50 55 60

Gly Ile Val Arg Thr Lys Val Asp Asp Cys Gln Phe Val Cys Ile Ala 65 70 75 80

Gln Gln Asp Tyr Trp Arg Ile Leu Asn His Val Glu Lys Asn Thr His 85 90 95

Lys Val Glu Glu Glu Glu Glu Ile Val Met Val His 100 105

<210> 59

<211> 82

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 59

Pro Arg Glu Thr Val Lys Ile Pro Asp Ser Ala Asp Gly Leu Gly Phe  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gln Ile Arg Gly Phe Gly Pro Ser Val Val His Ala Val Gly Arg Gly 20 25 30

Thr Val Ala Ala Ala Gly Leu His Pro Gly Gln Cys Ile Ile Lys  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Val Asn Gly Ile Asn Val Ser Lys Glu Thr His Ala Ser Val Ile Ala 50 55 60

His Val Thr Ala Cys Arg Lys Tyr Arg Arg Pro Thr Lys Gln Asp Ser 65 70 75 80

Ile Gln

<210> 60

<211> 89

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 60

Leu Glu Asn Val Ile Ala Lys Ser Leu Leu Ile Lys Ser Asn Glu Gly 1 5 10 15

Ser Tyr Gly Phe Gly Leu Glu Asp Lys Asn Lys Val Pro Ile Ile Lys 20 25 30

Leu Val Glu Lys Gly Ser Asn Ala Glu Met Ala Gly Met Glu Val Gly 35 40 45

Lys Lys Ile Phe Ala Ile Asn Gly Asp Leu Val Phe Met Arg Pro Phe 50 55 60

Asn Glu Val Asp Cys Phe Leu Lys Ser Cys Leu Asn Ser Arg Lys Pro 70 75 80

Leu Arg Val Leu Val Ser Thr Lys Pro

<210> 61

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 61

Glu Asp Phe Cys Tyr Val Phe Thr Val Glu Leu Glu Arg Gly Pro Ser  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Leu Gly Met Gly Leu Ile Asp Gly Met His Thr His Leu Gly Ala 20 . 25 30

Pro Gly Leu Tyr Ile Gln Thr Leu Leu Pro Gly Ser Pro Ala Ala Ala 35 40 45

Asp Gly Arg Leu Ser Leu Gly Asp Arg Ile Leu Glu Val Asn Gly Ser 50 60

Ser Leu Leu Gly Leu Gly Tyr Leu Arg Ala Val Asp Leu Ile Arg His 65 70 75 80

Gly Gly Lys Lys Met Arg Phe Leu Val Ala Lys Ser Asp Val Glu Thr

85 90 95

Ala Lys Lys Ile 100

<210> 62

<211> 91

<212> PRT

<213> Artificial Sequence

<2.20>

<223> Synthetic peptide

<400> 62

Leu Lys Gly Gly Leu Glu His Gly Glu Pro Leu Ile Ile Ser Lys Val 20 25 30

Glu Glu Gly Gly Lys Ala Asp Thr Leu Ser Ser Lys Leu Gln Ala Gly 35 40 45

Asp Glu Val Val His Ile Asn Glu Val Thr Leu Ser Ser Arg Lys 50 55 60

Glu Ala Val Ser Leu Val Lys Gly Ser Tyr Lys Thr Leu Arg Leu Val 65 70 75 80

Val Arg Arg Asp Val Cys Thr Asp Pro Gly His
85 90

<210> 63

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 63

Asn Asn Glu Leu Thr Gln Phe Leu Pro Arg Thr Ile Thr Leu Lys Lys
1 10 15

Pro Pro Gly Ala Gln Leu Gly Phe Asn Ile Arg Gly Gly Lys Ala Ser 20 25 30

Gln Leu Gly Ile Phe Ile Ser Lys Val Ile Pro Asp Ser Asp Ala His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Arg Ala Gly Leu Gln Glu Gly Asp Gln Val Leu Ala Val Asn Asp Val 50 55 60

Asp Phe Gln Asp Ile Glu His Ser Lys Ala Val Glu Ile Leu Lys Thr 65 70 75 80

Ala Arg Glu Ile Ser Met Arg Val Arg Phe Phe Pro Tyr Asn Tyr His 85 90 95

Arg Gln Lys Glu 100

<210> 64

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 64

Phe Leu Thr Glu Phe Gln Asp Lys Gln Ile Lys Asp Trp Lys Lys Arg

1 10 15

Phe Ile Gly Ile Arg Met Arg Thr Ile Thr Pro Ser Leu Val Asp Glu 20 25 30

Leu Lys Ala Ser Asn Pro Asp Phe Pro Glu Val Ser Ser Gly Ile Tyr 35 40 45

Val Gln Glu Val Ala Pro Asn Ser Pro Ser Gln Arg Gly Gly Ile Gln 50 60

Asp Gly Asp Ile Ile Val Lys Val Asn Gly Arg Pro Leu Val Asp Ser 65 70 75 80

Ser Glu Leu Gln Glu Ala Val Leu Thr Glu Ser Pro Leu Leu Glu 85 90 95

Val Arg Arg Gly Asn Asp Asp Leu Leu Phe Ser 100 105

<210> 65

<211> 94

<212> PRT

<213> Artificial Sequence

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<220>
<223> Synthetic peptide
<400> 65

Asn Lys Lys Tyr Leu Gly
1 5

Ser Glu Glu Leu Lys Met
20

Gly Val Tyr Val Cys Lys
35

Gly Leu Arg Asp His Asp
50
```

Asn Lys Lys Tyr Leu Gly Leu Gln Met Leu Ser Leu Thr Val Pro Leu

Ser Glu Glu Leu Lys Met His Tyr Pro Asp Phe Pro Asp Val Ser Ser 20 25 30

Gly Val Tyr Val Cys Lys Val Val Glu Gly Thr Ala Ala Gln Ser Ser 35 40 45

Gly Leu Arg Asp His Asp Val Ile Val Asn Ile Asn Gly Lys Pro Ile 50 55 . 60

Thr Thr Thr Thr Asp Val Val Lys Ala Leu Asp Ser Asp Ser Leu Ser 65 70 75 80

Met Ala Val Leu Arg Gly Lys Asp Asn Leu Leu Leu Thr Val \$85\$

<210> 66 <211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 66

Arg Lys Asp Gly Gln Ser Leu Gly Ile Arg Ile Val Gly Tyr Val Gly 20 25 30

Thr Ser His Thr Gly Glu Ala Ser Gly Ile Tyr Val Lys Ser Ile Ile 35 40 45

Pro Gly Ser Ala Ala Tyr His Asn Gly His Ile Gln Val Asn Asp Lys 50 55 60

Ile Val Ala Val Asp Gly Val Asn Ile Gln Gly Phe Ala Asn His Asp 65 70 75 80

Val Val Glu Val Leu Arg Asn Ala Gly Gln Val Val His Leu Thr Leu 85 90 95

Val Arg Arg Lys Thr Ser Ser Ser Thr Ser Arg Ile His Arg Asp 100 105 <210> 67 <211> 93 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 67 Pro Ala Thr Cys Pro Ile Val Pro Gly Gln Glu Met Ile Ile Glu Ile Ser Lys Gly Arg Ser Gly Leu Gly Leu Ser Ile Val Gly Gly Lys Asp Thr Pro Leu Asn Ala Ile Val Ile His Glu Val Tyr Glu Glu Gly Ala 40 Ala Ala Arg Asp Gly Arg Leu Trp Ala Gly Asp Gln Ile Leu Glu Val 55 Asn Gly Val Asp Leu Arg Asn Ser Ser His Glu Glu Ala Ile Thr Ala Leu Arg Gln Thr Pro Gln Lys Val Arg Leu Val Val Tyr <210> 68 <211> 100 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 68 Leu Pro Glu Thr Val Cys Trp Gly His Val Glu Glu Val Glu Leu Ile Asn Asp Gly Ser Gly Leu Gly Phe Gly Ile Val Gly Gly Lys Thr Ser 25 Gly Val Val Arg Thr Ile Val Pro Gly Gly Leu Ala Asp Arg Asp Gly Arg Leu Gln Thr Gly Asp His Ile Leu Lys Ile Gly Gly Thr Asn 50 55 60

Val Gln Gly Met Thr Ser Glu Gln Val Ala Gln Val Leu Arg Asn Cys 65 70 75 80

Gly Asn Ser Val Arg Met Leu Val Ala Arg Asp Pro Ala Gly Asp Ile 85 90 95

Gln Ser Pro Ile 100

<210> 69

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 69

Pro Asn Phe Ser His Trp Gly Pro Pro Arg Ile Val Glu Ile Phe Arg 1 5 10 15

Glu Pro Asn Val Ser Leu Gly Ile Ser Ile Val Val Gly Gln Thr Val 20 25 30

Ile Lys Arg Leu Lys Asn Gly Glu Glu Leu Lys Gly Ile Phe Ile Lys 35 40 45

Gln Val Leu Glu Asp Ser Pro Ala Gly Lys Thr Asn Ala Leu Lys Thr 50 55 60

Gly Asp Lys Ile Leu Glu Val Ser Gly Val Asp Leu Gln Asn Ala Ser 65 70 75 80

His Ser Glu Ala Val Glu Ala Ile Lys Asn Ala Gly Asn Pro Val Val 85 90 95

Phe Ile Val Gln Ser Leu Ser Ser Thr Pro Arg Val Ile Pro Asn Val 100 105 110

His Asn Lys Ala Asn Ser Ser 115

<210> 70

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<211> 99
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<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 70

Pro Gly Glu Leu His Ile Ile Glu Leu Glu Lys Asp Lys Asn Gly Leu 1 5 10 15

Gly Leu Ser Leu Ala Gly Asn Lys Asp Arg Ser Arg Met Ser Ile Phe 20 25 30

Val Val Gly Ile Asn Pro Glu Gly Pro Ala Ala Ala Asp Gly Arg Met 35 40 45

Arg Ile Gly Asp Glu Leu Leu Glu Ile Asn Asn Gln Ile Leu Tyr Gly 50 60

Arg Ser His Gln Asn Ala Ser Ala Ile Ile Lys Thr Ala Pro Ser Lys 65 70 75 80

Val Lys Leu Val Phe Ile Arg Asn Glu Asp Ala Val Asn Gln Met Ala 85 90 95

Asn Ser Ser

<210> 71

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 71

Leu Ser Ser Pro Glu Val Lys Ile Val Glu Leu Val Lys Asp Cys Lys

5 10 15

Gly Leu Gly Phe Ser Ile Leu Asp Tyr Gln Asp Pro Leu Asp Pro Thr 20 25 30

Arg Ser Val Ile Val Ile Arg Ser Leu Val Ala Asp Gly Val Ala Glu 35 40 45

Arg Ser Gly Gly Leu Pro Gly Asp Arg Leu Val Ser Val Asn Glu

50 55 60

Tyr Cys Leu Asp Asn Thr Ser Leu Ala Glu Ala Val Glu Ile Leu Lys 65 70 75 80

Ala Val Pro Pro Gly Leu Val His Leu Gly Ile Cys Lys Pro Leu Val 85 90 95

Glu Phe Ile Val Thr Asp 100

<210> 72

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 72

Ile Trp Gln Ile Glu Tyr Ile Asp Ile Glu Arg Pro Ser Thr Gly Gly 1 5 10 15

Leu Gly Phe Ser Val Val Ala Leu Arg Ser Gln Asn Leu Gly Lys Val 20 25 30

Asp Ile Phe Val Lys Asp Val Gln Pro Gly Ser Val Ala Asp Arg Asp 35 40 45

Gln Arg Leu Lys Glu Asn Asp Gln Ile Leu Ala Ile Asn His Thr Pro  $50 \hspace{1cm} 55 \hspace{1cm} 60$ 

Leu Asp Gln Asn Ile Ser His Gln Gln Ala Ile Ala Leu Leu Gln Gln 65 70 75 80

Thr Thr Gly Ser Leu Arg Leu Ile Val Ala Arg Glu Pro Val His Thr 85 90 95

Lys Ser Ser Thr Ser Ser Ser Glu 100

<210> 73

<211> 96

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 73

Asn Ser Asp Asp Ala Glu Leu Gln Lys Tyr Ser Lys Leu Leu Pro Ile 5 10 15

His Thr Leu Arg Leu Gly Val Glu Val Asp Ser Phe Asp Gly His His 20 25 30

Tyr Ile Ser Ser Ile Val Ser Gly Gly Pro Val Asp Thr Leu Gly Leu  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Leu Gln Pro Glu Asp Glu Leu Leu Glu Val Asn Gly Met Gln Leu Tyr 50 55 60

Gly Lys Ser Arg Arg Glu Ala Val Ser Phe Leu Lys Glu Val Pro Pro 65 70 75 80

Pro Phe Thr Leu Val Cys Cys Arg Arg Leu Phe Asp Asp Glu Ala Ser 85 90 95

<210> 74

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 74

Leu Met Thr Leu Thr Lys Pro Ser Arg Glu Ala Pro Leu Pro Phe Ile 20 25 30

Leu Leu Gly Gly Ser Glu Lys Gly Phe Gly Ile Phe Val Asp Ser Val
35 40 45

Asp Ser Gly Ser Lys Ala Thr Glu Ala Gly Leu Lys Arg Gly Asp Gln 50 55 60

Ile Leu Glu Val Asn Gly Gln Asn Phe Glu Asn Ile Gln Leu Ser Lys 70 75 80

Ala Met Glu Ile Leu Arg Asn Asn Thr His Leu Ser Ile Thr Val Lys 85 90 95

Thr Asn Leu Phe Val Phe Lys Glu Leu Leu Thr Arg Leu Ser Glu Glu

100 105 110

Lys Arg Asn Gly Ala Pro 115

<210> 75

<211> 88

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 75

Ile Pro Pro Ala Pro Arg Lys Val Glu Met Arg Arg Asp Pro Val Leu 1 5 10 15

Gly Phe Gly Phe Val Ala Gly Ser Glu Lys Pro Val Val Arg Ser 20 25 30

Val Thr Pro Gly Gly Pro Ser Glu Gly Lys Leu Ile Pro Gly Asp Gln 35 40 45

Ile Val Met Ile Asn Asp Glu Pro Val Ser Ala Ala Pro Arg Glu Arg 50 55 60

Val Ile Asp Leu Val Arg Ser Cys Lys Glu Ser Ile Leu Leu Thr Val 65 70 75 80

Ile Gln Pro Tyr Pro Ser Pro Lys 85

<210> 76

<211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 76

Leu Lys Val Val Gly Gly Lys Met Thr Asp Leu Gly Arg Leu Gly Ala 20 25 30

Phe Ile Thr Lys Val Lys Lys Gly Ser Leu Ala Asp Val Val Gly His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Leu Arg Ala Gly Asp Glu Val Leu Glu Trp Asn Gly Lys Pro Leu Pro Gly Ala Thr Asn Glu Glu Val Tyr Asn Ile Ile Leu Glu Ser Lys Ser 70 75 Glu Pro Gln Val Glu Ile Ile Val Ser Arg Pro Ile Gly Asp Ile Pro 85 90 Arg Ile His Arg Asp 100 <210> 77 <211> 77 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 77 Arg Cys Val Ile Ile Gln Lys Asp Gln His Gly Phe Gly Phe Thr Val Ser Gly Asp Arg Ile Val Leu Val Gln Ser Val Arg Pro Gly Gly Ala Ala Met Lys Ala Gly Val Lys Glu Gly Asp Arg Ile Ile Lys Val Asn 40 Gly Thr Met Val Thr Asn Ser Ser His Leu Glu Val Val Lys Leu Ile 50 Lys Ser Gly Ala Tyr Val Ala Leu Thr Leu Leu Gly Ser 70 <210> 78 <211> 87 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 78

10

Ile Leu Val Gln Arg Cys Val Ile Ile Gln Lys Asp Asp Asn Gly Phe

5

Gly Leu Thr Val Ser Gly Asp Asn Pro Val Phe Val Gln Ser Val Lys . 25 20

Glu Asp Gly Ala Ala Met Arg Ala Gly Val Gln Thr Gly Asp Arg Ile 40

Ile Lys Val Asn Gly Thr Leu Val Thr His Ser Asn His Leu Glu Val 50 55 60

Val Lys Leu Ile Lys Ser Gly Ser Tyr Val Ala Leu Thr Val Gln Gly 70 75

Arg Pro Pro Gly Asn Ser Ser 85

<210> 79

<211> 78

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 79

Ser Val Glu Met Thr Leu Arg Arg Asn Gly Leu Gly Gln Leu Gly Phe

His Val Asn Tyr Glu Gly Ile Val Ala Asp Val Glu Pro Tyr Gly Tyr

Ala Trp Gln Ala Gly Leu Arg Gln Gly Ser Arg Leu Val Glu Ile Cys 40

Lys Val Ala Val Ala Thr Leu Ser His Glu Gln Met Ile Asp Leu Leu 55

Arg Thr Ser Val Thr Val Lys Val Val Ile Ile Pro Pro His 70

<210> 80

<211> 96

<212> PRT <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 80

Leu Lys Val Met Thr Ser Gly Trp Glu Thr Val Asp Met Thr Leu Arg Arg Asn Gly Leu Gly Gln Leu Gly Phe His Val Lys Tyr Asp Gly Thr 25 Val Ala Glu Val Glu Asp Tyr Gly Phe Ala Trp Gln Ala Gly Leu Arg 40 Gln Gly Ser Arg Leu Val Glu Ile Cys Lys Val Ala Val Val Thr Leu Thr His Asp Gln Met Ile Asp Leu Leu Arg Thr Ser Val Thr Val Lys 75 Val Val Ile Ile Pro Pro Phe Glu Asp Gly Thr Pro Arg Arg Gly Trp 90 85 <210> 81 <211> 105 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 81 His Tyr Ile Phe Pro His Ala Arg Ile Lys Ile Thr Arg Asp Ser Lys Asp His Thr Val Ser Gly Asn Gly Leu Gly Ile Arg Ile Val Gly Gly 20 Lys Glu Ile Pro Gly His Ser Gly Glu Ile Gly Ala Tyr Ile Ala Lys 35 40 Ile Leu Pro Gly Gly Ser Ala Glu Gln Thr Gly Lys Leu Met Glu Gly 50 5.5 Met Gln Val Leu Glu Trp Asn Gly Ile Pro Leu Thr Ser Lys Thr Tyr 65 70 75 Glu Glu Val Gln Ser Ile Ile Ser Gln Gln Ser Gly Glu Ala Glu Ile 90 Cys Val Arg Leu Asp Leu Asn Met Leu

100

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<210> 82
<211> 86
<212> PRT
<213> Artificial Sequence
<223> Synthetic peptide
<400> 82
Ser Tyr Ser Val Thr Leu Thr Gly Pro Gly Pro Trp Gly Phe Arg Leu
               5
                                   10
Gln Gly Gly Lys Asp Phe Asn Met Pro Leu Thr Ile Ser Arg Ile Thr
            20
                               25
Pro Gly Ser Lys Ala Ala Gln Ser Gln Leu Ser Gln Gly Asp Leu Val
Val Ala Ile Asp Gly Val Asn Thr Asp Thr Met Thr His Leu Glu Ala
    50
                       55
Gln Asn Lys Ile Lys Ser Ala Ser Tyr Asn Leu Ser Leu Thr Leu Gln
            70
                                      75
Lys Ser Lys Asn Ser Ser
<210> 83
<211> 94
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 83
Phe Ser Asp Met Arg Ile Ser Ile Asn Gln Thr Pro Gly Lys Ser Leu
                                  1.0
Asp Phe Gly Phe Thr Ile Lys Trp Asp Ile Pro Gly Ile Phe Val Ala
                               25
Ser Val Glu Ala Gly Ser Pro Ala Glu Phe Ser Gln Leu Gln Val Asp
Asp Glu Ile Ile Ala Ile Asn Asn Thr Lys Phe Ser Tyr Asn Asp Ser
```

60 .

55

50

Lys Glu Trp Glu Glu Ala Met Ala Lys Ala Gln Glu Thr Gly His Leu 65 70 75 80

Val Met Asp Val Arg Arg Tyr Gly Lys Ala Gly Ser Pro Glu 85 90

<210> 84

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 84

Gln Ser Ala His Leu Glu Val Ile Gln Leu Ala Asn Ile Lys Pro Ser  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Glu Gly Leu Gly Met Tyr Ile Lys Ser Thr Tyr Asp Gly Leu His Val 20 25 30

Ile Thr Gly Thr Thr Glu Asn Ser Pro Ala Asp Arg Cys Lys Lys Ile 35 40 45

His Ala Gly Asp Glu Val Ile Gln Val Asn His Gln Thr Val Val Gly 50 60

Trp Gln Leu Lys Asn Leu Val Asn Ala Leu Arg Glu Asp Pro Ser Gly 65 70 75 80

Val Ile Leu Thr Leu Lys Lys Arg Pro Gln Ser Met Leu Thr Ser Ala 85 90 95

Pro Ala

<210> 85

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 85

Ile Leu Thr Gln Thr Leu Ile Pro Val Arg His Thr Val Lys Ile Asp  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Lys Asp Thr Leu Leu Gln Asp Tyr Gly Phe His Ile Ser Glu Ser Leu 20 25 30

Pro Leu Thr Val Val Ala Val Thr Ala Gly Gly Ser Ala His Gly Lys  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Leu Phe Pro Gly Asp Gln Ile Leu Gln Met Asn Asn Glu Pro Ala Glu 50 55 60

Asp Leu Ser Trp Glu Arg Ala Val Asp Ile Leu Arg Glu Ala Glu Asp 65 70 75 80

Ser Leu Ser Ile Thr Val Val Arg Cys Thr Ser Gly Val Pro Lys Ser 85 90 95

Ser Asn Ser Ser 100

<210> 86

<211> 91

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 86

Arg Ser Phe Gln Tyr Val Pro Val Gln Leu Gln Gly Gly Ala Pro Trp  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Phe Thr Leu Lys Gly Gly Leu Glu His Cys Glu Pro Leu Thr Val 20 25 30

Ser Lys Ile Glu Asp Gly Gly Lys Ala Ala Leu Ser Gln Lys Met Arg 35 40 45

Thr Gly Asp Glu Leu Val Asn Ile Asn Gly Thr Pro Leu Tyr Gly Ser 50 60

Arg Gln Glu Ala Leu Ile Leu Ile Lys Gly Ser Phe Arg Ile Leu Lys 65 70 75 80

Leu Ile Val Arg Arg Arg Asn Ala Pro Val Ser . 85 90

<210> 87

<211> 103

<212> PRT

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<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 87
Ile Leu Glu Lys Leu Glu Leu Phe Pro Val Glu Leu Glu Lys Asp Glu
                5
                                   1.0
Asp Gly Leu Gly Ile Ser Ile Ile Gly Met Gly Val Gly Ala Asp Ala
           20
                               25
                                                   30
Gly Leu Glu Lys Leu Gly Ile Phe Val Lys Thr Val Thr Glu Gly Gly
        35
                            40
Ala Ala Gln Arg Asp Gly Arg Ile Gln Val Asn Asp Gln Ile Val Glu
                       55
Val Asp Gly Ile Ser Leu Val Gly Val Thr Gln Asn Phe Ala Ala Thr
            70
Val Leu Arg Asn Thr Lys Gly Asn Val Arg Phe Val Ile Gly Arg Glu
                                  90
Lys Pro Gly Gln Val Ser Glu
          100
<210> 88
<211> 113
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 88
Lys Asp Val Asn Val Tyr Val Asn Pro Lys Lys Leu Thr Val Ile Lys
                                   10
Ala Lys Glu Gln Leu Lys Leu Leu Glu Val Leu Val Gly Ile Ile His
Gln Thr Lys Trp Ser Trp Arg Arg Thr Gly Lys Gln Gly Asp Gly Glu
Arg Leu Val Val His Gly Leu Leu Pro Gly Gly Ser Ala Met Lys Ser
```

55

Gly Gln Val Leu Ile Gly Asp Val Leu Val Ala Val Asn Asp Val Asp Val Thr Thr Glu Asn Ile Glu Arg Val Leu Ser Cys Ile Pro Gly Pro 90 Met Gln Val Lys Leu Thr Phe Glu Asn Ala Tyr Asp Val Lys Arg Glu 100 105 Thr <210> 89 <211> 90 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 89 Thr Arg Gly Cys Glu Thr Val Glu Met Thr Leu Arg Arg Asn Gly Leu Gly Gln Leu Gly Phe His Val Asn Phe Glu Gly Ile Val Ala Asp Val Glu Pro Phe Gly Phe Ala Trp Lys Ala Gly Leu Arg Gln Gly Ser Arg Leu Val Glu Ile Cys Lys Val Ala Val Ala Thr Leu Thr His Glu Gln 50 55 Met Ile Asp Leu Leu Arg Thr Ser Val Thr Val Lys Val Val Ile Ile 75 70 Gln Pro His Asp Asp Gly Ser Pro Arg Arg 85 <210> 90 <211> 96 <212> PRT <213> Artificial Sequence <223> Synthetic peptide <400> 90

Val Glu Asn Ile Leu Ala Lys Arg Leu Leu Ile Leu Pro Gln Glu Glu

Asp Tyr Gly Phe Asp Ile Glu Glu Lys Asn Lys Ala Val Val Lys 20 25 30

Ser Val Gln Arg Gly Ser Leu Ala Glu Val Ala Gly Leu Gln Val Gly 35 40 45

Arg Lys Ile Tyr Ser Ile Asn Glu Asp Leu Val Phe Leu Arg Pro Phe 50 55 60 .

Ser Glu Val Glu Ser Ile Leu Asn Gln Ser Phe Cys Ser Arg Arg Pro 65 70 75 80

Leu Arg Leu Leu Val Ala Thr Lys Ala Lys Glu Ile Ile Lys Ile Pro 85 90 95

<210> 91

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 91

Pro Asp Ser Ala Gly Pro Gly Glu Val Arg Leu Val Ser Leu Arg Arg
1 10 15

Ala Lys Ala His Glu Gly Leu Gly Phe Ser Ile Arg Gly Gly Ser Glu 20 25 30

His Gly Val Gly Ile Tyr Val Ser Leu Val Glu Pro Gly Ser Leu Ala 35 40 45

Glu Lys Glu Gly Leu Arg Val Gly Asp Gln Ile Leu Arg Val Asn Asp 50 55 60

Lys Ser Leu Ala Arg Val Thr His Ala Glu Ala Val Lys Ala Leu Lys 65 70 75 80

Gly Ser Lys Leu Val Leu Ser Val Tyr Ser Ala Gly Arg Ile Pro 85 90 95

Gly Gly Tyr Val Thr Asn His

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<210> 92
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<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 92

Leu Gln Gly Gly Asp Glu Lys Lys Val Asn Leu Val Leu Gly Asp Gly
1 10 15

Arg Ser Leu Gly Leu Thr Ile Arg Gly Gly Ala Glu Tyr Gly Leu Gly 20 25 30

Ile Tyr Ile Thr Gly Val Asp Pro Gly Ser Glu Ala Glu Gly Ser Gly 35 40 45

Leu Lys Val Gly Asp Gln Ile Leu Glu Val Asn Gly Arg Ser Phe Leu 50 55 60

Asn Ile Leu His Asp Glu Ala Val Arg Leu Leu Lys Ser Ser Arg His 65 70 75 80

Leu Ile Leu Thr Val Lys Asp Val Gly Arg Leu Pro His Ala Arg Thr 85 90 95

Thr Val Asp Glu 100

<210> 93

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 93

Leu Arg Arg Ala Glu Leu Val Glu Ile Ile Val Glu Thr Glu Ala Gln 1 5 10 15

Thr Gly Val Ser Gly Ile Asn Val Ala Gly Gly Gly Lys Glu Gly Ile 20 25 30

Phe Val Arg Glu Leu Arg Glu Asp Ser Pro Ala Ala Arg Ser Leu Ser 35 40 45

Leu Gln Glu Gly Asp Gln Leu Leu Ser Ala Arg Val Phe Phe Glu Asn

50 55 60

Phe Lys Tyr Glu Asp Ala Leu Arg Leu Leu Gln Cys Ala Glu Pro Tyr 65 70 75 80

Lys Val Ser Phe Cys Leu Lys Arg Thr Val Pro Thr Gly Asp Leu Ala 85 90 95

Leu Arg

<210> 94

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 94

Gly Gly Pro Leu Gly Ile Thr Ile Ser Gly Thr Glu Glu Pro Phe Asp 20 25 30

Pro Ile Val Ile Ser Gly Leu Thr Lys Arg Gly Leu Ala Glu Arg Thr 35 40 45

Gly Ala Ile His Val Gly Asp Arg Ile Leu Ala Ile Asn Asn Val Ser 50 55 60

Leu Lys Gly Arg Pro Leu Ser Glu Ala Ile His Leu Leu Gln Val Ala 65 70 75 80

Gly Glu Thr Val Thr Leu Lys Ile Lys Lys Gln Leu Asp Arg  $85 \\ 90$ 

<210> 95

<211> 105

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 95

Ile Leu Glu Met Glu Glu Leu Leu Pro Thr Pro Leu Glu Met His 1 5 10 15

Lys Val Thr Leu His Lys Asp Pro Met Arg His Asp Phe Gly Phe Ser 20 25 30

Val Ser Asp Gly Leu Leu Glu Lys Gly Val Tyr Val His Thr Val Arg
35 40 45

Pro Asp Gly Pro Ala His Arg Gly Gly Leu Gln Pro Phe Asp Arg Val 50 55 60

Leu Gln Val Asn His Val Arg Thr Arg Asp Phe Asp Cys Cys Leu Ala 65 70 75 80

Val Pro Leu Leu Ala Glu Ala Gly Asp Val Leu Glu Leu Ile Ile Ser 85 90 95

Arg Lys Pro His Thr Ala His Ser Ser \ 100 \ 105

<210> 96

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 96

Ile His Thr Val Ala Asn Ala Ser Gly Pro Leu Met Val Glu Ile Val 1 5 10 15

Lys Thr Pro Gly Ser Ala Leu Gly Ile Ser Leu Thr Thr Thr Ser Leu 20 25 30

Arg Asn Lys Ser Val Ile Thr Ile Asp Arg Ile Lys Pro Ala Ser Val 35 40 45

Val Asp Arg Ser Gly Ala Leu His Pro Gly Asp His Ile Leu Ser Ile 50 60

Asp Gly Thr Ser Met Glu His Cys Ser Leu Leu Glu Ala Thr Lys Leu 65 70 75 80

Leu Ala Ser Ile Ser Glu Lys Val Arg Leu Glu Ile Leu Pro Val Pro 85 90 95

Gln Ser Gln Arg Pro Leu

100

<210> 97 <211> 84 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 97 Ile Thr Val Val Glu Leu Ile Lys Lys Glu Gly Ser Thr Leu Gly Leu 5 10 Thr Ile Ser Gly Gly Thr Asp Lys Asp Gly Lys Pro Arg Val Ser Asn 25 Leu Arg Pro Gly Gly Leu Ala Ala Arg Ser Asp Leu Leu Asn Ile Gly 40 Asp Tyr Ile Arg Ser Val Asn Gly Ile His Leu Thr Arg Leu Arg His Asp Glu Ile Ile Thr Leu Leu Lys Asn Val Gly Glu Arg Val Val Leu Glu Val Glu Tyr <210> 98 <211> 103 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 98 Ile Gln Ile Val His Thr Glu Thr Thr Glu Val Val Leu Cys Gly Asp Pro Leu Ser Gly Phe Gly Leu Gln Leu Gln Gly Gly Ile Phe Ala Thr Glu Thr Leu Ser Ser Pro Pro Leu Val Cys Phe Ile Glu Pro Asp Ser Pro Ala Glu Arg Cys Gly Leu Leu Gln Val Gly Asp Arg Val Leu Ser

60

55

Ile Asn Gly Ile Ala Thr Glu Asp Gly Thr Met Glu Glu Ala Asn Gln 65 70 75 80

Leu Leu Arg Asp Ala Ala Leu Ala His Lys Val Val Leu Glu Val Glu 85 90 95

Phe Asp Val Ala Glu Ser Val .100

<210> 99

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 99

Ile Leu Asp Val Ser Leu Tyr Lys Glu Gly Asn Ser Phe Gly Phe Val 1 5 10 15

Leu Arg Gly Gly Ala His Glu Asp Gly His Lys Ser Arg Pro Leu Val 20 25 30

Leu Thr Tyr Val Arg Pro Gly Gly Pro Ala Asp Arg Glu Gly Ser Leu 35 40 45

Lys Val Gly Asp Arg Leu Leu Ser Val Asp Gly Ile Pro Leu His Gly 50 60

Ala Ser His Ala Thr Ala Leu Ala Thr Leu Arg Gln Cys Ser His Glu 65 70 75 80

Ala Leu Phe Gln Val Glu Tyr Asp Val Ala Thr Pro 85 90

<210> 100

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 100

Gln Phe Asp Val Ala Glu Ser Val Ile Pro Ser Ser Gly Thr Phe His 1  $\phantom{-}5\phantom{+}10\phantom{+}10\phantom{+}15\phantom{+}10\phantom{+}15\phantom{+}10\phantom{+}15\phantom{+}10\phantom{+}1$ 

Val Lys Leu Pro Lys Lys Arg Ser Val Glu Leu Gly Ile Thr Ile Ser 20 25 30

Ser Ala Ser Arg Lys Arg Gly Glu Pro Leu Ile Ile Ser Asp Ile Lys 35 40 45

Lys Gly Ser Val Ala His Arg Thr Gly Thr Leu Glu Pro Gly Asp Lys 50 55 60

Leu Leu Ala Ile Asp Asn Ile Arg Leu Asp Asn Cys Pro Met Glu Asp 65 70 75 80

Ala Val Gln Ile Leu Arg Gln Cys Glu Asp Leu Val Lys Leu Lys Ile 85 90 95

Arg Lys Asp Glu Asp Asn 100

<210> 101

<211> 91

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 101

Met Ala Leu Thr Val Asp Val Ala Gly Pro Ala Pro Trp Gly Phe Arg 1  $\phantom{000}5\phantom{000}$  10  $\phantom{000}15\phantom{000}$ 

Ile Thr Gly Gly Arg Asp Phe His Thr Pro Ile Met Val Thr Lys Val 20 25 30

Ala Glu Arg Gly Lys Ala Lys Asp Ala Asp Leu Arg Pro Gly Asp Ile 35 40 45

Ile Val Ala Ile Asn Gly Glu Ser Ala Glu Gly Met Leu His Ala Glu 50 55 60

Ala Gln Ser Lys Ile Arg Gln Ser Pro Ser Pro Leu Arg Leu Gln Leu 65 70 75 80

Asp Arg Ser Gln Ala Thr Ser Pro Gly Gln Thr 85 90

<210> 102 <211> 84

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<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 102
Ser Asn Tyr Ser Val Ser Leu Val Gly Pro Ala Pro Trp Gly Phe Arg
                                   10
Leu Gln Gly Gly Lys Asp Phe Asn Met Pro Leu Thr Ile Ser Ser Leu
                               25
Lys Asp Gly Gly Lys Ala Ala Gln Ala Asn Val Arg Ile Gly Asp Val
                           40
Val Leu Ser Ile Asp Gly Ile Asn Ala Gln Gly Met Thr His Leu Glu
                       55
Ala Gln Asn Lys Ile Lys Gly Cys Thr Gly Ser Leu Asn Met Thr Leu
Gln Arg Ala Ser
<210> 103
<211> 133
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 103
Thr Leu Val Glu His Ser Lys Leu Tyr Cys Gly His Cys Tyr Tyr Gln
           5
                                   10
Thr Val Val Thr Pro Val Ile Glu Gln Ile Leu Pro Asp Ser Pro Gly
           20
                        . 25
```

His Gly Lys Arg Gly Leu Ser Val Ser Ile Asp Pro Pro His Gly Pro So Gly Cys Gly Thr Glu His Ser His Thr Val Arg Val Gln Gly Val 65

Ser His Leu Pro His Thr Val Thr Leu Val Ser Ile Pro Ala Ser Ser

40

35

Asp Pro Gly Cys Met Ser Pro Asp Val Lys Asn Ser Ile His Val Gly 85 90 95

Asp Arg Ile Leu Glu Ile Asn Gly Thr Pro Ile Arg Asn Val Pro Leu 100 105 110

Asp Glu Ile Asp Leu Leu Ile Gln Glu Thr Ser Arg Leu Leu Gln Leu 115 120 125

Thr Leu Glu His Asp 130

<210> 104

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 104

Pro Tyr Ser Val Thr Leu Ile Ser Met Pro Ala Thr Thr Glu Gly Arg 1  $\phantom{000}5\phantom{000}$  10  $\phantom{000}15\phantom{000}$ 

Arg Gly Phe Ser Val Ser Val Glu Ser Ala Cys Ser Asn Tyr Ala Thr 20 25 30

Thr Val Gln Val Lys Glu Val Asn Arg Met His Ile Ser Pro Asn Asn 35 40 45

Arg Asn Ala Ile His Pro Gly Asp Arg Ile Leu Glu Ile Asn Gly Thr 50 60

Pro Val Arg Thr Leu Arg Val Glu Glu Val Glu Asp Ala Ile Ser Gln 65 70 75 80

Thr Ser Gln Thr Leu Gln Leu Leu Ile Glu His Asp
85 90

<210> 105

<211> 82

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 105

Ile His Ser Val Thr Leu Arg Gly Pro Ser Pro Trp Gly Phe Arg Leu 1 5 10 15

Val Gly Arg Asp Phe Ser Ala Pro Leu Thr Ile Ser Arg Val His Ala 20 25 30

Gly Ser Lys Ala Ser Leu Ala Ala Leu Cys Pro Gly Asp Leu Ile Gln
35 40 45

Ala Ile Asn Gly Glu Ser Thr Glu Leu Met Thr His Leu Glu Ala Gln 50 55 60

Asn Arg Ile Lys Gly Cys His Asp His Leu Thr Leu Ser Val Ser Arg 65 70 75 80

Pro Glu

<210> 106

<211> 74

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 106

Val Cys Tyr Arg Thr Asp Asp Glu Glu Asp Leu Gly Ile Tyr Val Gly 1  $\phantom{-}5\phantom{+}10\phantom{+}10\phantom{+}15\phantom{+}10$ 

Glu Val Asn Pro Asn Ser Ile Ala Ala Lys Asp Gly Arg Ile Arg Glu 20 25 30

Gly Asp Arg Ile Ile Gln Ile Asn Gly Val Asp Val Gln Asn Arg Glu 35 40 45

Glu Ala Val Ala Ile Leu Ser Gln Glu Glu Asn Thr Asn Ile Ser Leu 50 55 60

Leu Val Ala Arg Pro Glu Ser Gln Leu Ala 65 70

<210> 107

<211> 93

<212> PRT

<213> Artificial Sequence

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<220>
<223>
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<223> Synthetic peptide

<400> 107

Pro Met Gly Phe Gly Phe Thr Ile Ala Asp Ser Pro Gly Gly Gly Gly 20 25 30

Gln Arg Val Lys Gln Ile Val Asp Ser Pro Arg Cys Arg Gly Leu Lys 35 40 45

Glu Gly Asp Leu Ile Val Glu Val Asn Lys Lys Asn Val Gln Ala Leu 50 55 60

Thr His Asn Gln Val Val Asp Met Leu Val Glu Cys Pro Lys Gly Ser 70 75 80

Glu Val Thr Leu Leu Val Gln Arg Gly Gly Asn Ser Ser 85 90

<210> 108

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 108

Ile Pro Asp Tyr Gln Glu Gln Asp Ile Phe Leu Trp Arg Lys Glu Thr 1 5 10 15

Gly Phe Gly Phe Arg Ile Leu Gly Gly Asn Glu Pro Gly Glu Pro Ile 20 25 30

Tyr Ile Gly His Ile Val Pro Leu Gly Ala Ala Asp Thr Asp Gly Arg 35 40 45

Leu Arg Ser Gly Asp Glu Leu Ile Cys Val Asp Gly Thr Pro Val Ile 50 55 60

Gly Lys Ser His Gln Leu Val Val Gln Leu Met Gln Gln Ala Ala Lys 65 70 75 80

Gln Gly His Val Asn Leu Thr Val Arg Arg Lys Val Val Phe Ala Val 85 90 95

100 <210> 109 <211> 120 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 109 Ile Pro Gly Val Val Ser Thr Val Val Gln Pro Tyr Asp Val Glu Ile 10 15 Arg Arg Gly Glu Asn Glu Gly Phe Gly Phe Val Ile Val Ser Ser Val Ser Arg Pro Glu Ala Gly Thr Thr Phe Ala Gly Asn Ala Cys Val Ala 40 Met Pro His Lys Ile Gly Arg Ile Ile Glu Gly Ser Pro Ala Asp Arg 55 Cys Gly Lys Leu Lys Val Gly Asp Arg Ile Leu Ala Val Asn Gly Cys Ser Ile Thr Asn Lys Ser His Ser Asp Ile Val Asn Leu Ile Lys Glu 90 Ala Gly Asn Thr Val Thr Leu Arg Ile Ile Pro Gly Asp Glu Ser Ser 100 105 Asn Ala Glu Phe Ile Val Thr Asp 115 <210> 110 <211> 107 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide

Pro Lys Thr Glu Asn Ser Ser

<400> 110

Ile Pro Ser Glu Leu Lys Gly Lys Phe Ile His Thr Lys Leu Arg Lys

Ser Ser Arg Gly Phe Gly Phe Thr Val Val Gly Gly Asp Glu Pro Asp 20 25 30

Glu Phe Leu Gln Ile Lys Ser Leu Val Leu Asp Gly Pro Ala Ala Leu 35 40 45

Asp Gly Lys Met Glu Thr Gly Asp Val Ile Val Ser Val Asn Asp Thr 50 55 60

Cys Val Leu Gly His Thr His Ala Gln Val Val Lys Ile Phe Gln Ser 70 75 80

Ile Pro Ile Gly Ala Ser Val Asp Leu Glu Leu Cys Arg Gly Tyr Pro 85 90 95

Leu Pro Phe Asp Pro Asp Gly Ile His Arg Asp 100 105

<210> 111

<211> 91

<212> PRT

<213> Artificial Sequence

<220>

1

<223> Synthetic peptide

<400> 111

Gln Ala Thr Gln Glu Gln Asp Phe Tyr Thr Val Glu Leu Glu Arg Gly  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ala Lys Gly Phe Gly Phe Ser Leu Arg Gly Gly Arg Glu Tyr Asn Met 20 25 30

Asp Leu Tyr Val Leu Arg Leu Ala Glu Asp Gly Pro Ala Glu Arg Cys 35 40 45

Gly Lys Met Arg Ile Gly Asp Glu Ile Leu Glu Ile Asn Gly Glu Thr 50 55 60

Thr Lys Asn Met Lys His Ser Arg Ala Ile Glu Leu Ile Lys Asn Gly 65 70 75 80

Gly Arg Arg Val Arg Leu Phe Leu Lys Arg Gly 85 90

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<210> 112
<211> 104
<212>
      PRT
<213>
      Artificial Sequence
<220>
<223> Synthetic peptide
<400> 112
Arg Glu Lys Pro Leu Phe Thr Arg Asp Ala Ser Gln Leu Lys Gly Thr
               5
                     10
Phe Leu Ser Thr Thr Leu Lys Lys Ser Asn Met Gly Phe Gly Phe Thr
Ile Ile Gly Gly Asp Glu Pro Asp Glu Phe Leu Gln Val Lys Ser Val
       35
                           40
                                               45
Ile Pro Asp Gly Pro Ala Ala Gln Asp Gly Lys Met Glu Thr Gly Asp
    50
                       55
Val Ile Val Tyr Ile Asn Glu Val Cys Val Leu Gly His Thr His Ala
Asp Val Val Lys Leu Phe Gln Ser Val Pro Ile Gly Gln Ser Val Asn
Leu Val Leu Cys Arg Gly Tyr Pro
           100
<210> 113
<211> 93
<212>
      PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
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Pro Gly Asp Glu Leu Val Tyr Val Asp Gly Ile Pro Val Ala Gly Lys 50 55 60

Thr His Arg Tyr Val Ile Asp Leu Met His His Ala Ala Arg Asn Gly 65 70 75 80

Gln Val Asn Leu Thr Val Arg Arg Lys Val Leu Cys Gly 85 90

<210> 114

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 114

Glu Gly Arg Gly Ile Ser Ser His Ser Leu Gln Thr Ser Asp Ala Val 1 5 10 15

Ile His Arg Lys Glu Asn Glu Gly Phe Gly Phe Val Ile Ile Ser Ser 20 25 30

Leu Asn Arg Pro Glu Ser Gly Ser Thr Ile Thr Val Pro His Lys Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Gly Arg Ile Ile Asp Gly Ser Pro Ala Asp Arg Cys Ala Lys Leu Lys 50 55 60

Val Gly Asp Arg Ile Leu Ala Val Asn Gly Gln Ser Ile Ile Asn Met 65 70 75 80

Pro His Ala Asp Ile Val Lys Leu Ile Lys Asp Ala Gly Leu Ser Val 85 90 95

Thr Leu Arg Ile Ile Pro Gln Glu Glu Leu 100 105

<210> 115

<211> 91

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 115

Leu Ser Gly Ala Thr Gln Ala Glu Leu Met Thr Leu Thr Ile Val Lys  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Ala Gln Gly Phe Gly Phe Thr Ile Ala Asp Ser Pro Thr Gly Gln 20 25 30

Arg Val Lys Gln Ile Leu Asp Ile Gln Gly Cys Pro Gly Leu Cys Glu 35 40 45

Gly Asp Leu Ile Val Glu Ile Asn Gln Gln Asn Val Gln Asn Leu Ser 50 55 60

His Thr Glu Val Val Asp Ile Leu Lys Asp Cys Pro Ile Gly Ser Glu 65 70 75 80

Thr Ser Leu Ile Ile His Arg Gly Gly Phe Phe 85 90

<210> 116

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 116

Leu Ser Asp Tyr Arg Gln Pro Gln Asp Phe Asp Tyr Phe Thr Val Asp

5 10 15

Met Glu Lys Gly Ala Lys Gly Phe Gly Phe Ser Ile Arg Gly Gly Arg 20 25 30

Glu Tyr Lys Met Asp Leu Tyr Val Leu Arg Leu Ala Glu Asp Gly Pro 35 40 45

Ala Ile Arg Asn Gly Arg Met Arg Val Gly Asp Gln Ile Ile Glu Ile 50 55 60

Asn Gly Glu Ser Thr Arg Asp Met Thr His Ala Arg Ala Ile Glu Leu 65 70 75 80

Ile Lys Ser Gly Gly Arg Arg Val Arg Leu Leu Leu Lys Arg Gly Thr 85 90 95

Gly Gln

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<210> 117
<211> 90
<212>
      PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 117
His Glu Ser Val Ile Gly Arg Asn Pro Glu Gly Gln Leu Gly Phe Glu
Leu Lys Gly Gly Ala Glu Asn Gly Gln Phe Pro Tyr Leu Gly Glu Val
Lys Pro Gly Lys Val Ala Tyr Glu Ser Gly Ser Lys Leu Val Ser Glu
                           40
Glu Leu Leu Glu Val Asn Glu Thr Pro Val Ala Gly Leu Thr Ile
   50
                       55
Arg Asp Val Leu Ala Val Ile Lys His Cys Lys Asp Pro Leu Arg Leu
                                      75
Lys Cys Val Lys Gln Gly Gly Ile His Arg
<210> 118
<211>
      100
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 118
Ala Ser Ser Gly Ser Ser Gln Pro Glu Leu Val Thr Ile Pro Leu Ile
               5
Lys Gly Pro Lys Gly Phe Gly Phe Ala Ile Ala Asp Ser Pro Thr Gly
           20
Gln Lys Val Lys Met Ile Leu Asp Ser Gln Trp Cys Gln Gly Leu Gln
```

Lys Gly Asp Ile Ile Lys Glu Ile Tyr His Gln Asn Val Gln Asn Leu

55

Thr His Leu Gln Val Val Glu Val Leu Lys Gln Phe Pro Val Gly Ala 65 . 70 75 80

Asp Val Pro Leu Leu Ile Leu Arg Gly Gly Pro Pro Ser Pro Thr Lys 85 90 95

Thr Ala Lys Met 100

<210> 119

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 119

Gln Asn Leu Gly Cys Tyr Pro Val Glu Leu Glu Arg Gly Pro Arg Gly 1 5 10 15

Phe Gly Phe Ser Leu Arg Gly Gly Lys Glu Tyr Asn Met Gly Leu Phe 20 25 30

Ile Leu Arg Leu Ala Glu Asp Gly Pro Ala Ile Lys Asp Gly Arg Ile 35 40 45

His Val Gly Asp Gln Ile Val Glu Ile Asn Gly Glu Pro Thr Gln Gly 50 55 60

Ile Thr His Thr Arg Ala Ile Glu Leu Ile Gln Ala Gly Gly Asn Lys 70 75 80

Val Leu Leu Leu Arg Pro Gly Thr Gly Leu Ile Pro Asp His Gly 85 90 95

Leu Ala

<210> 120

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 120

Leu Tyr Glu Asp Lys Pro Pro Asn Thr Lys Asp Leu Asp Val Phe Leu 1 5 10 Arg Lys Gln Glu Ser Gly Phe Gly Phe Arg Val Leu Gly Gly Asp Gly Pro Asp Gln Ser Ile Tyr Ile Gly Ala Ile Ile Pro Leu Gly Ala Ala 40 Glu Lys Asp Gly Arg Leu Arg Ala Ala Asp Glu Leu Met Cys Ile Asp 55 Gly Ile Pro Val Lys Gly Lys Ser His Lys Gln Val Leu Asp Leu Met Thr Thr Ala Ala Arg Asn Gly His Val Leu Leu Thr Val Arg Arg Lys 90 Ile Phe Tyr Gly Glu Lys Gln Pro Glu Asp Asp Ser <210> 121 <211> 102 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 121 Pro Ser Gln Leu Lys Gly Val Leu Val Arg Ala Ser Leu Lys Lys Ser Thr Met Gly Phe Gly Phe Thr Ile Ile Gly Gly Asp Arg Pro Asp Glu Phe Leu Gln Val Lys Asn Val Leu Lys Asp Gly Pro Ala Ala Gln Asp Gly Lys Ile Ala Pro Gly Asp Val Ile Val Asp Ile Asn Gly Asn Cys 50 55 Val Leu Gly His Thr His Ala Asp Val Val Gln Met Phe Gln Leu Val Pro Val Asn Gln Tyr Val Asn Leu Thr Leu Cys Arg Gly Tyr Pro Leu 85 90

Pro Asp Asp Ser Glu Asp 100

<210> 122

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 122

Pro Ala Pro Gl<br/>n Glu Pro Tyr Asp Val Val Leu Gl<br/>n Arg Lys Glu As<br/>n 1 5 10 15

Glu Gly Phe Gly Phe Val Ile Leu Thr Ser Lys Asn Lys Pro Pro Pro 20 25 30

Gly Val Ile Pro His Lys Ile Gly Arg Val Ile Glu Gly Ser Pro Ala 35 40 45

Asp Arg Cys Gly Lys Leu Lys Val Gly Asp His Ile Ser Ala Val Asn 50 60

Gly Gln Ser Ile Val Glu Leu Ser His Asp Asn Ile Val Gln Leu Ile
65 70 75 80

Lys Asp Ala Gly Val Thr Val Thr Leu Thr Val Ile Ala Glu Glu Glu 85 90 95

His His Gly Pro Pro Ser 100

<210> 123

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 123

Gly Leu Arg Ser Pro Ile Thr Ile Gln Arg Ser Gly Lys Lys Tyr Gly
1 10 15

Phe Thr Leu Arg Ala Ile Arg Val Tyr Met Gly Asp Thr Asp Val Tyr 20 25 30

Ser Val His His Ile Val Trp His Val Glu Glu Gly Gly Pro Ala Gln 35 40 45

Glu Ala Gly Leu Cys Ala Gly Asp Leu Ile Thr His Val Asn Gly Glu 50 55 60

Pro Val His Gly Met Val His Pro Glu Val Val Glu Leu Ile Leu Lys 70 75 80

Ser Gly Asn Lys Val Ala Val Thr Thr Thr Pro Phe Glu Asn 85 90

<210> 124

<211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 124

Ile Ser Ala Leu Gly Ser Met Arg Pro Pro Ile Ile Ile His Arg Ala 1 5 10 15

Gly Lys Lys Tyr Gly Phe Thr Leu Arg Ala Ile Arg Val Tyr Met Gly 20 25 30

Asp Ser Asp Val Tyr Thr Val His His Met Val Trp His Val Glu Asp 35 40 45

Gly Gly Pro Ala Ser Glu Ala Gly Leu Arg Gln Gly Asp Leu Ile Thr 50 55 60

His Val Asn Gly Glu Pro Val His Gly Leu Val His Thr Glu Val Val 65 70 75 80

Glu Leu Ile Leu Lys Ser Gly Asn Lys Val Ala Ile Ser Thr Thr Pro 85 90 95

Leu Glu Asn Ser Ser 100

<210> 125

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 125

Leu Cys Gly Ser Leu Arg Pro Pro Ile Val Ile His Ser Ser Gly Lys 5 15

Lys Tyr Gly Phe Ser Leu Arg Ala Ile Arg Val Tyr Met Gly Asp Ser 25 . 30

Asp Val Tyr Thr Val His His Val Val Trp Ser Val Glu Asp Gly Ser 40

Pro Ala Gln Glu Ala Gly Leu Arg Ala Gly Asp Leu Ile Thr His Ile

Asn Gly Glu Ser Val Leu Gly Leu Val His Met Asp Val Val Glu Leu

Leu Leu Lys Ser Gly Asn Lys Ile Ser Leu Arg Thr Thr Ala Leu Glu 90

Asn Thr Ser Ile Lys Val Gly 100

<210> 126

<211> 91 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 126

Pro His Gln Pro Ile Val Ile His Ser Ser Gly Lys Asn Tyr Gly Phe 10

Thr Ile Arg Ala Ile Arg Val Tyr Val Gly Asp Ser Asp Ile Tyr Thr 20 25

Val His His Ile Val Trp Asn Val Glu Glu Gly Ser Pro Ala Cys Gln 35 40

Ala Gly Leu Lys Ala Gly Asp Leu Ile Thr His Ile Asn Gly Glu Pro

Val His Gly Leu Val His Thr Glu Val Ile Glu Leu Leu Leu Ser

Gly Asn Lys Val Ser Ile Thr Thr Pro Phe 85 <210> 127 <211> 100 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 127 Pro Ala Lys Met Glu Lys Glu Glu Thr Thr Arg Glu Leu Leu Pro Asn Trp Gln Gly Ser Gly Ser His Gly Leu Thr Ile Ala Gln Arg Asp Asp Gly Val Phe Val Glu Val Thr Gln Asn Ser Pro Ala Ala Arg 40 Thr Gly Val Val Lys Glu Gly Asp Gln Ile Val Gly Ala Thr Ile Tyr 50 55 Phe Asp Asn Leu Gln Ser Gly Glu Val Thr Gln Leu Leu Asn Thr Met 70 75 Gly His His Thr Val Gly Leu Lys Leu His Arg Lys Gly Asp Arg Ser Pro Asn Ser Ser <210> 128 <211> 98 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 128 Ser Glu Asn Cys Lys Asp Val Phe Ile Glu Lys Gln Lys Gly Glu Ile 5

Val Ile Ile Ala Asn Met Met His Gly Gly Pro Ala Glu Lys Ser Gly

Leu Gly Val Val Ile Val Glu Ser Gly Trp Gly Ser Ile Leu Pro Thr

35 40 45

Lys Leu Asn Ile Gly Asp Gln Ile Met Ser Ile Asn Gly Thr Ser Leu 50 55 60

Val Gly Leu Pro Leu Ser Thr Cys Gln Ser Ile Ile Lys Gly Leu Lys 65 70 75 80

Asn Gln Ser Arg Val Lys Leu Asn Ile Val Arg Cys Pro Pro Val Asn 85 90 95

Ser Ser

<210> 129

<211> 178

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 129

Ser Glu Asn Cys Lys Asp Val Phe Ile Glu Lys Gln Lys Gly Glu Ile 1 5 10 15

Leu Gly Val Val Ile Val Glu Ser Gly Trp Gly Ser Ile Leu Pro Thr 20 25 30

Val Ile Ile Ala Asn Met Met His Gly Gly Pro Ala Glu Lys Ser Gly 35 40 45

Lys Leu Asn Ile Gly Asp Gln Ile Met Ser Ile Asn Gly Thr Ser Leu 50 55 60

Val Gly Leu Pro Leu Ser Thr Cys Gln Ser Ile Ile Lys Gly Leu Glu 65 70 75 80

Asn Gln Ser Arg Val Lys Leu Asn Ile Val Arg Cys Pro Pro Val Thr \$85\$ 90 95

Thr Val Leu Ile Arg Arg Pro Asp Leu Arg Tyr Gln Leu Gly Phe Ser 100 105 110

Val Gln Asn Gly Ile Ile Cys Ser Leu Met Arg Gly Gly Ile Ala Glu 115 120 125

Arg Gly Gly Val Arg Val Gly His Arg Ile Ile Glu Ile Asn Gly Gln 130 135 140

Ser Val Val Ala Thr Pro His Glu Lys Ile Val His Ile Leu Ser Asn 145 150 155 160

Ala Val Gly Glu Ile His Met Lys Thr Met Pro Ala Ala Met Tyr Arg 165 170 175

Leu Leu

<210> 130

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 130

Leu Arg Cys Pro Pro Val Thr Thr Val Leu Ile Arg Arg Pro Asp Leu 1 5 10 15

Arg Tyr Gln Leu Gly Phe Ser Val Gln Asn Gly Ile Ile Cys Ser Leu 20 25 30

Met Arg Gly Gly Ile Ala Glu Arg Gly Gly Val Arg Val Gly His Arg 35 40 45

Ile Ile Glu Ile Asn Gly Gln Ser Val Val Ala Thr Pro His Glu Lys 50 60

Ile Val His Ile Leu Ser Asn Ala Val Gly Glu Ile His Met Lys Thr 65 70 75 80

Met Pro Ala Ala Met Tyr Arg Leu Leu Asn Ser Ser 85 90

<210> 131

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 131

His Asn Gly Asp Leu Asp His Phe Ser Asn Ser Asp Asn Cys Arg Glu

Val His Leu Glu Lys Arg Arg Gly Glu Gly Leu Gly Val Ala Leu Val
20 25 30

Glu Ser Gly Trp Gly Ser Leu Leu Pro Thr Ala Val Ile Ala Asn Leu 35 40 45

Leu His Gly Gly Pro Ala Glu Arg Ser Gly Ala Leu Ser Ile Gly Asp 50 55 60

Arg Leu Thr Ala Ile Asn Gly Thr Ser Leu Val Gly Leu Pro Leu Ala 65 70 75 80

Ala Cys Gln Ala Ala Val Arg Glu Thr Lys Ser Gln Thr Ser Val Thr 85 90 95

Leu Ser Ile Val His Cys Pro Pro Val Thr 100 105

<210> 132

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 132

Pro Val Thr Thr Ala Ile Ile His Arg Pro His Ala Arg Glu Gln Leu  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Phe Cys Val Glu Asp Gly Ile Ile Cys Ser Leu Leu Arg Gly Gly 20 25 30

Ile Ala Glu Arg Gly Gly Ile Arg Val Gly His Arg Ile Ile Glu Ile 35 40 45

Asn Gly Gln Ser Val Val Ala Thr Pro His Ala Arg Ile Ile Glu Leu 50 55 60

Leu Thr Glu Ala Tyr Gly Glu Val His Ile Lys Thr Met Pro Ala Ala 65 70 75 80

Thr Tyr Arg Leu Leu Thr Gly Asn Ser Ser 85

<210> 133

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 133

Leu Ser Asn Ser Asp Asn Cys Arg Glu Val His Leu Glu Lys Arg Arg  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Glu Gly Leu Gly Val Ala Leu Val Glu Ser Gly Trp Gly Ser Leu 20 25 30

Leu Pro Thr Ala Val Ile Ala Asn Leu Leu His Gly Gly Pro Ala Glu 35 40 45

Arg Ser Gly Ala Leu Ser Ile Gly Asp Arg Leu Thr Ala Ile Asn Gly 50 55 60

Thr Ser Leu Val Gly Leu Pro Leu Ala Ala Cys Gln Ala Ala Val Arg 65 70 75 80

Glu Thr Lys Ser Gln Thr Ser Val Thr Leu Ser Ile Val His Cys Pro\$85\$ 90 95

Pro Val Thr Thr Ala Ile Met 100

<210> 134

<211> 86

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 134

Arg Lys Val Arg Leu Ile Gln Phe Glu Lys Val Thr Glu Glu Pro Met 1 5 10 15

Gly Ile Thr Leu Lys Leu Asn Glu Lys Gln Ser Cys Thr Val Ala Arg 20 25 30

Asp Glu Ile Leu Glu Ile Asn Gly Thr Asn Val Thr Asn His Ser Val 50 60

Asp Gln Leu Gln Lys Ala Met Lys Glu Thr Lys Gly Met Ile Ser Leu 70 75 80

Lys Val Ile Pro Asn Gln 85

<210> 135

<211> 89

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 135

Pro Val Pro Pro Asp Ala Val Arg Met Val Gly Ile Arg Lys Thr Ala 1 5 10 15

Gly Glu His Leu Gly Val Thr Phe Arg Val Glu Gly Gly Glu Leu Val 20 25 30

Ile Ala Arg Ile Leu His Gly Gly Met Val Ala Gln Gln Gly Leu Leu  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

His Val Gly Asp Ile Ile Lys Glu Val Asn Gly Gln Pro Val Gly Ser 50 55 60

Asp Pro Arg Ala Leu Gln Glu Leu Leu Arg Asn Ala Ser Gly Ser Val 65 70 75 80

Ile Leu Lys Ile Leu Pro Asn Tyr Gln 85

<210> 136

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 136

Asn Ile Asp Glu Asp Phe Asp Glu Glu Ser Val Lys Ile Val Arg Leu 1 5 10 15

Val Lys Asn Lys Glu Pro Leu Gly Ala Thr Ile Arg Arg Asp Glu His

20 25 30

Ser Gly Ala Val Val Ala Arg Ile Met Arg Gly Gly Ala Ala Asp 35 40 45

Arg Ser Gly Leu Val His Val Gly Asp Glu Leu Arg Glu Val Asn Gly 50 55 60

Ile Ala Val Leu His Lys Arg Pro Asp Glu Ile Ser Gln Ile Leu Ala 65 70 75 80

Gln Ser Gln Gly Ser Ile Thr Leu Lys Ile Ile Pro Ala Thr Gln Glu 85 90 95

Glu Asp Arg

<210> 137

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 137

Trp Glu Ala Gly Ile Gln His Ile Glu Leu Glu Lys Gly Ser Lys Gly 1  $\phantom{-}$  5  $\phantom{-}$  10  $\phantom{-}$  15

Leu Gly Phe Ser Ile Leu Asp Tyr Gln Asp Pro Ile Asp Pro Ala Ser 20 25 30

Thr Val Ile Ile Ile Arg Ser Leu Val Pro Gly Gly Ile Ala Glu Lys  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Asp Gly Arg Leu Leu Pro Gly Asp Arg Leu Met Phe Val Asn Asp Val 50 55 60

Asn Leu Glu Asn Ser Ser Leu Glu Glu Ala Val Glu Ala Leu Lys Gly 65 70 75 80

Ala Pro Ser Gly Thr Val Arg Ile Gly Val Ala Lys Pro Leu 85 90 95

Ser Pro Glu Glu 100

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<210> 138
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<211> 96

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 138

Leu Gln Gly Leu Arg Thr Val Glu Met Lys Lys Gly Pro Thr Asp Ser 1 10 15

Leu Gly Ile Ser Ile Ala Gly Gly Val Gly Ser Pro Leu Gly Asp Val 20 25 30

Pro Ile Phe Ile Ala Met Met His Pro Thr Gly Val Ala Ala Gln Thr 35 40 45

Gln Lys Leu Arg Val Gly Asp Arg Ile Val Thr Ile Cys Gly Thr Ser 50 60

Thr Glu Gly Met Thr His Thr Gln Ala Val Asn Leu Leu Lys Asn Ala 65 70 75 80

Ser Gly Ser Ile Glu Met Gln Val Val Ala Gly Gly Asp Val Ser Val 85 90 95

<210> 139

<211> 97

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 139

Pro Val His Trp Gln His Met Glu Thr Ile Glu Leu Val Asn Asp Gly 1 5 10 15

Ser Gly Leu Gly Phe Gly Ile Ile Gly Gly Lys Ala Thr Gly Val Ile 20 25 30

Val Lys Thr Ile Leu Pro Gly Gly Val Ala Asp Gln His Gly Arg Leu 35 40 45

Cys Ser Gly Asp His Ile Leu Lys Ile Gly Asp Thr Asp Leu Ala Gly 50 55 60

Met Ser Ser Glu Gln Val Ala Gln Val Leu Arg Gln Cys Gly Asn Arg

65 70 75 80

Val Lys Leu Met Ile Ala Arg Gly Ala Ile Glu Glu Arg Thr Ala Pro 85 90 95

Thr

<210> 140

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 140

Gln Glu Ser Glu Thr Phe Asp Val Glu Leu Thr Lys Asn Val Gln Gly 1 5 10 15

Leu Gly Ile Thr Ile Ala Gly Tyr Ile Gly Asp Lys Lys Leu Glu Pro 20 25 30

Ser Gly Ile Phe Val Lys Ser Ile Thr Lys Ser Ser Ala Val Glu His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Asp Gly Arg Ile Gln Ile Gly Asp Gln Ile Ile Ala Val Asp Gly Thr 50 60

Asn Leu Gln Gly Phe Thr Asn Gln Gln Ala Val Glu Val Leu Arg His 65 70 75 80

Thr Gly Gln Thr Val Leu Leu Thr Leu Met Arg Arg Gly Met Lys Gln 85 90 95

Glu Ala

<210> 141

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 141

Lys Glu Glu Glu Val Cys Asp Thr Leu Thr Ile Glu Leu Gln Lys Lys 1  $\phantom{\bigg|}$  5  $\phantom{\bigg|}$  10  $\phantom{\bigg|}$  15

Pro Gly Lys Gly Leu Gly Leu Ser Ile Val Gly Lys Arg Asn Asp Thr 20 25 30

Gly Val Phe Val Ser Asp Ile Val Lys Gly Gly Ile Ala Asp Ala Asp 35 40 45

Gly Arg Leu Met Gln Gly Asp Gln Ile Leu Met Val Asn Gly Glu Asp 50 55 60

Val Arg Asn Ala Thr Gln Glu Ala Val Ala Ala Leu Leu Lys Cys Ser 65 70 75 80

Leu Gly Thr Val Thr Leu Glu Val Gly Arg Ile Lys Ala Gly Pro Phe
85 90 95

His Ser

<210> 142

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 142

Leu Gly Leu Ser Leu Ala Gly Asn Lys Asp Arg Ser Arg Met Ser Val $20 \hspace{1.5cm} 25 \hspace{1.5cm} 30$ 

Phe Ile Val Gly Ile Asp Pro Asn Gly Ala Ala Gly Lys Asp Gly Arg 35 40 45

Leu Gln Ile Ala Asp Glu Leu Leu Glu Ile Asn Gly Gln Ile Leu Tyr 50 55 60

Gly Arg Ser His Gln Asn Ala Ser Ser Ile Ile Lys Cys Ala Pro Ser 65 70 75 80

Lys Val Lys Ile Ile Phe Ile Arg Asn Lys Asp Ala Val Asn Gln 85 90 95

<210> 143

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<211> 91
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 143
Leu Gly Pro Pro Gln Cys Lys Ser Ile Thr Leu Glu Arg Gly Pro Asp
                       10
Gly Leu Gly Phe Ser Ile Val Gly Gly Tyr Gly Ser Pro His Gly Asp
Leu Pro Ile Tyr Val Lys Thr Val Phe Ala Lys Gly Ala Ala Ser Glu
Asp Gly Arg Leu Lys Arg Gly Asp Gln Ile Ile Ala Val Asn Gly Gln
Ser Leu Glu Gly Val Thr His Glu Glu Ala Val Ala Ile Leu Lys Arg
Thr Lys Gly Thr Val Thr Leu Met Val Leu Ser
               85
<210> 144
<211> 99
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 144
Arg Asn Val Ser Lys Glu Ser Phe Glu Arg Thr Ile Asn Ile Ala Lys
Gly Asn Ser Ser Leu Gly Met Thr Val Ser Ala Asn Lys Asp Gly Leu
                               25
Gly Met Ile Val Arg Ser Ile Ile His Gly Gly Ala Ile Ser Arg Asp
Gly Arg Ile Ala Ile Gly Asp Cys Ile Leu Ser Ile Asn Glu Glu Ser
Thr Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His
```

Ser Leu Ile Gly Pro Asp Ile Lys Ile Thr Tyr Val Pro Ala Glu His 85 90 95

Leu Glu Glu

<210> 145

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 145

Leu Pro Gly Cys Glu Thr Thr Ile Glu Ile Ser Lys Gly Arg Thr Gly
1 5 10 15

Leu Gly Leu Ser Ile Val Gly Gly Ser Asp Thr Leu Leu Gly Ala Ile 20 25 30

Ile Ile His Glu Val Tyr Glu Glu Gly Ala Ala Cys Lys Asp Gly Arg
35 40 45

Leu Trp Ala Gly Asp Gln Ile Leu Glu Val Asn Gly Ile Asp Leu Arg 50 55 60

Lys Ala Thr His Asp Glu Ala Ile Asn Val Leu Arg Gln Thr Pro Gln 65 70 75 80

Arg Val Arg Leu Thr Leu Tyr Arg Asp Glu Ala Pro Tyr Lys Glu 85 90 95

<210> 146

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 146

Leu Asn Trp Asn Gln Pro Arg Arg Val Glu Leu Trp Arg Glu Pro Ser 1 5 10 15

Lys Ser Leu Gly Ile Ser Ile Val Gly Gly Arg Gly Met Gly Ser Arg 20 25 30

Leu Ser Asn Gly Glu Val Met Arg Gly Ile Phe Ile Lys His Val Leu 35 40 45

Glu Asp Ser Pro Ala Gly Lys Asn Gly Thr Leu Lys Pro Gly Asp Arg
50 60

Ile Val Glu Val Asp Gly Met Asp Leu Arg Asp Ala Ser His Glu Gln 65 70 75 80

Ala Val Glu Ala Ile Arg Lys Ala Gly Asn Pro Val Val Phe Met Val 85 90 95

Gln Ser Ile Ile Asn Arg Pro Arg Lys Ser Pro Leu Pro Ser Leu Leu 100 105 110

<210> 147

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 147

Leu Ser Ser Phe Lys Asn Val Gln His Leu Glu Leu Pro Lys Asp Gln  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Gly Gly Leu Gly Ile Ala Ile Ser Glu Glu Asp Thr Leu Ser Gly Val $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Ile Ile Lys Ser Leu Thr Glu His Gly Val Ala Ala Thr Asp Gly Arg 35 40 45

Leu Lys Val Gly Asp Gln Ile Leu Ala Val Asp Asp Glu Ile Val Val 50 55 60

Gly Tyr Pro Ile Glu Lys Phe Ile Ser Leu Leu Lys Thr Ala Lys Met 65 70 75 80

Thr Val Lys Leu Thr Ile His Ala Glu Asn Pro Asp Ser Glu 85 90

<210> 148

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 148

Gln Gly Arg His Val Glu Val Phe Glu Leu Leu Lys Pro Pro Ser Gly
1 5 10 15

Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser Glu Asn Arg Gly Glu 20 25 30

Leu Gly Ile Phe Val Gl<br/>n Glu Ile Gl<br/>n Glu Gly Ser Val Ala His Arg\$35\$ 40 45

Asp Gly Arg Leu Lys Glu Thr Asp Gln Ile Leu Ala Ile Asn Gly Gln 50 60

Ala Leu Asp Gln Thr Ile Thr His Gln Gln Ala Ile Ser Ile Leu Gln 65 70 75 80

Lys Ala Lys Asp Thr Val Gln Leu Val Ile Ala Arg Gly Ser Leu Pro85 90 95

Gln Leu Val

<210> 149

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 149

Leu Asn Tyr Glu Ile Val Val Ala His Val Ser Lys Phe Ser Glu Asn  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ser Gly Leu Gly Ile Ser Leu Glu Ala Thr Val Gly His His Phe Ile 20 25 30

Arg Ser Val Leu Pro Glu Gly Pro Val Gly His Ser Gly Lys Leu Phe  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Gly Asp Glu Leu Leu Glu Val Asn Gly Ile Thr Leu Leu Gly Glu 50 60

Asn His Gln Asp Val Val Asn Ile Leu Lys Glu Leu Pro Ile Glu Val

Thr Met Val Cys Cys Arg Arg Thr Val Pro Pro Thr 85 90

<210> 150

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 150

Ile Thr Leu Leu Lys Gly Pro Lys Gly Leu Gly Phe Ser Ile Ala Gly
1 5 10 15

Gly Ile Gly Asn Gln His Ile Pro Gly Asp Asn Ser Ile Tyr Ile Thr 20 25 30

Lys Ile Ile Glu Gly Gly Ala Ala Gln Lys Asp Gly Arg Leu Gln Ile  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Gly Asp Arg Leu Leu Ala Val Asn Asn Thr Asn Leu Gln Asp Val Arg 50 60

His Glu Glu Ala Val Ala Ser Leu Lys Asn Thr Ser Asp Met Val Tyr 65 70 75 80

Leu Lys Val Ala Lys Pro Gly Ser Leu Glu 85 90

<210> 151

<211> 93

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 151

Phe Ser Ile Ala Gly Gly Ile Asp Asn Pro His Val Pro Asp Asp Pro 20 25 30

Gly Ile Phe Ile Thr Lys Ile Ile Pro Gly Gly Ala Ala Met Asp  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Gly Arg Leu Gly Val Asn Asp Cys Val Leu Arg Val Asn Glu Val Glu 50 60

Val Ser Glu Val Val His Ser Arg Ala Val Glu Ala Leu Lys Glu Ala 65 70 75 80

Gly Pro Val Val Arg Leu Val Val Arg Arg Gln Asn 85 90

<210> 152

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 152

Ile Leu Leu His Lys Gly Ser Thr Gly Leu Gly Phe Asn Ile Val Gly 1  $\phantom{000}5\phantom{000}$  10  $\phantom{000}15\phantom{000}$ 

Gly Glu Asp Gly Glu Gly Ile Phe Val Ser Phe Ile Leu Ala Gly Gly 20 25 30

Pro Ala Asp Leu Ser Gly Glu Leu Arg Arg Gly Asp Arg Ile Leu Ser 35 40 45

Val Asn Gly Val Asn Leu Arg Asn Ala Thr His Glu Gln Ala Ala 50 55 60

Ala Leu Lys Arg Ala Gly Gln Ser Val Thr Ile Val Ala Gln Tyr Arg 65 70 75 80

Pro Glu Glu Tyr Ser Arg Phe Glu Ser Lys Ile His Asp Leu Arg Glu 85 90 95

Gln Met Met Asn Ser Ser Met Ser Ser Gly Ser Gly Ser Leu Arg Thr  $100 \\ \hspace{1.5cm} 105 \\ \hspace{1.5cm} 110$ 

Ser Glu Lys Arg Ser Leu Glu 115

<210> 153

<211> 187

<212> PRT

<213> Artificial Sequence

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<220>
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<223> Synthetic peptide

<400> 153

Tyr Glu Glu Ile Val Leu Glu Arg Gly Asn Ser Gly Leu Gly Phe Ser 1 5 10 15

Ile Ala Gly Gly Ile Asp Asn Pro His Val Pro Asp Asp Pro Gly Ile 20 25 30

Phe Ile Thr Lys Ile Ile Pro Gly Gly Ala Ala Ala Met Asp Gly Arg 35 40 45

Leu Gly Val Asn Asp Cys Val Leu Arg Val Asn Glu Val Glu Val Ser 50 55 60

Glu Val Val His Ser Arg Ala Val Glu Ala Leu Lys Glu Ala Gly Pro 65 70 75 80

Val Val Arg Leu Val Val Arg Arg Gln Pro Pro Pro Glu Thr Ile 85 90 95

Met Glu Val Asn Leu Leu Lys Gly Pro Lys Gly Leu Gly Phe Ser Ile 100 105 110

Ala Gly Gly Ile Gly Asn Gln His Ile Pro Gly Asp Asn Ser Ile Tyr 115 120 125

Ile Thr Lys Ile Ile Glu Gly Gly Ala Ala Gln Lys Asp Gly Arg Leu 130 135 140

Gln Ile Gly Asp Arg Leu Leu Ala Val Asn Asn Thr Asn Leu Gln Asp 145 150 155 160

Val Arg His Glu Glu Ala Val Ala Ser Leu Lys Asn Thr Ser Asp Met  $165 \hspace{1.5cm} 170 \hspace{1.5cm} 175$ 

Val Tyr Leu Lys Val Ala Lys Pro Gly Ser Leu 180 185

<210> 154

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 154

Arg Val Glu Arg Leu Glu Leu Phe Pro Val Glu Leu Glu Lys Asp Ser 1 5 10 15

Glu Gly Leu Gly Ile Ser Ile Ile Gly Met Gly Ala Gly Ala Asp Met 20 25 30

Gly Leu Glu Lys Leu Gly Ile Phe Val Lys Thr Val Thr Glu Gly Gly 35 40 45

Ala Ala His Arg Asp Gly Arg Ile Gln Val Asn Asp Leu Leu Val Glu 50 55 60

Val Asp Gly Thr Ser Leu Val Gly Val Thr Gln Ser Phe Ala Ala Ser 65 70 75 80

Val Leu Arg Asn Thr Lys Gly Arg Val Arg Cys Arg Phe Met Ile Gly 85 90 95

Årg Glu Arg Pro Gly Glu Gln Ser Glu Val 100 105

<210> 155

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 155

Gln Pro Asn Val Ile Ser Val Arg Leu Phe Lys Arg Lys Val Gly Gly 1 5 10 15

Leu Gly Phe Leu Val Lys Glu Arg Val Ser Lys Pro Pro Val Ile Ile 20 25 30

Ser Asp Leu Ile Arg Gly Gly Ala Ala Glu Gln Ser Gly Leu Ile Gln 35 40 45

Ala Gly Asp Ile Ile Leu Ala Val Asn Gly Arg Pro Leu Val Asp Leu 50 55 60

Ser Tyr Asp Ser Ala Leu Glu Val Leu Arg Gly Ile Ala Ser Glu Thr 65 70 75 80

His Val Val Leu Ile Leu Arg Gly Pro Glu

85 90

<210> 156

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 156

Pro Ser Asp Thr Ser Ser Glu Asp Gly Val Arg Arg Ile Val His Leu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Tyr Thr Ser Asp Asp Phe Cys Leu Gly Phe Asn Ile Arg Gly Gly 20 25 30

Lys Glu Phe Gly Leu Gly Ile Tyr Val Ser Lys Val Asp His Gly Gly 35 40 45

Leu Ala Glu Glu Asn Gly Ile Lys Val Gly Asp Gln Val Leu Ala Ala 50 55 60

Asn Gly Val Arg Phe Asp Asp Ile Ser His Ser Gln Ala Val Glu Val 65 70 75 80

Leu Lys Gly Gln Thr His Ile Met Leu Thr Ile Lys Glu Thr Gly Arg 85 90 95

Tyr Pro Ala Tyr Lys Glu Met 100

<210> 157 <211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 157

Glu Ala Asn Ser Asp Glu Ser Asp Ile Ile His Ser Val Arg Val Glu
1 10 15

Lys Ser Pro Ala Gly Arg Leu Gly Phe Ser Val Arg Gly Gly Ser Glu 20 25 30

His Gly Leu Gly Ile Phe Val Ser Lys Val Glu Glu Gly Ser Ser Ala 35 40 45

Glu Arg Ala Gly Leu Cys Val Gly Asp Lys Ile Thr Glu Val Asn Gly 50 60

Leu Ser Leu Glu Ser Thr Thr Met Gly Ser Ala Val Lys Val Leu Thr 65 70 75 80

Ser Ser Ser Arg Leu His Met Met Val Arg Arg Met Gly Arg Val Pro\$85\$ 90 95

Gly Ile Lys Phe Ser Lys Glu Lys 100

<210> 158

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 158

Asp Lys Ile Lys Lys Phe Leu Thr Glu Ser His Asp Arg Gln Ala Lys 1 5 10 15

Gly Lys Ala Ile Thr Lys Lys Lys Tyr Ile Gly Ile Arg Met Met Ser 20 25 30

Leu Thr Ser Ser Lys Ala Lys Glu Leu Lys Asp Arg His Arg Asp Phe 35 40 45

Pro Asp Val Ile Ser Gly Ala Tyr Ile Ile Glu Val Ile Pro Asp Thr 50 55 60

Pro Ala Glu Ala Gly Gly Leu Lys Glu Asn Asp Val Ile Ile Ser Ile 65 70 75 80

Asn Gly Gln Ser Val Val Ser Ala Asn Asp Val Ser Asp Val Ile Lys
85 90 95

Arg Glu Ser Thr Leu Asn Met Val Val Arg Arg Gly Asn Glu Asp Ile 100 105 110

Met Ile Thr Val 115

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<210> 159
<211> 98
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 159
Tyr Arg Pro Arg Asp Asp Ser Phe His Val Ile Leu Asn Lys Ser Ser
Pro Glu Glu Gln Leu Gly Ile Lys Leu Val Arg Lys Val Asp Glu Pro
                               2.5
Gly Val Phe Ile Phe Asn Ala Leu Asp Gly Gly Val Ala Tyr Arg His
Gly Gln Leu Glu Glu Asn Asp Arg Val Leu Ala Ile Asn Gly His Asp
Leu Arg Tyr Gly Ser Pro Glu Ser Ala Ala His Leu Ile Gln Ala Ser
                                       75
                    70
Glu Arg Arg Val His Leu Val Val Ser Arg Gln Val Arg Gln Arg Ser
                85
                                    90
Pro Asp
<210> 160
<211>
      100
<212>
      PRT
<213> Artificial Sequence
<223> Synthetic peptide
<400> 160
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Pro Thr Ile Thr Cys His Glu Lys Val Val Asn Ile Gln Lys Asp Pro 1 5 10 15

Gly Glu Ser Leu Gly Met Thr Val Ala Gly Gly Ala Ser His Arg Glu 20 25 30

Trp Asp Leu Pro Ile Tyr Val Ile Ser Val Glu Pro Gly Gly Val Ile 35 40 45

Ser Arg Asp Gly Arg Ile Lys Thr Gly Asp Ile Leu Leu Asn Val Asp

50 55 60

Gly Val Glu Leu Thr Glu Val Ser Arg Ser Glu Ala Val Ala Leu Leu 65 70 75 80

Lys Arg Thr Ser Ser Ser Ile Val Leu Lys Ala Leu Glu Val Lys Glu
85 90 95

Tyr Glu Pro Gln 100

<210> 161

<211> 97

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 161

Pro Asp Gly Glu Ile Thr Ser Ile Lys Ile Asn Arg Val Asp Pro Ser 1  $\phantom{\bigg|}5\phantom{\bigg|}$  10  $\phantom{\bigg|}15\phantom{\bigg|}$ 

Glu Ser Leu Ser Ile Arg Leu Val Gly Gly Ser Glu Thr Pro Leu Val 20 25 30

His Ile Ile Gln His Ile Tyr Arg Asp Gly Val Ile Ala Arg Asp 35 40 45

Gly Arg Leu Leu Pro Arg Asp Ile Ile Leu Lys Val Asn Gly Met Asp 50 55 60

Ile Ser Asn Val Pro His Asn Tyr Ala Val Arg Leu Leu Arg Gln Pro 65 70 75 80

Cys Gln Val Leu Trp Leu Thr Val Met Arg Glu Gln Lys Phe Arg Ser 85 ' 90 95

Arg

<210> 162

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 162

Pro Arg Cys Leu Tyr Asn Cys Lys Asp Ile Val Leu Arg Arg Asn Thr 5 10 15

Ala Gly Ser Leu Gly Phe Cys Ile Val Gly Gly Tyr Glu Glu Tyr Asn 20 25 30

Gly Asn Lys Pro Phe Phe Ile Lys Ser Ile Val Glu Gly Thr Pro Ala 35 40 45

Tyr Asn Asp Gly Arg Ile Arg Cys Gly Asp Ile Leu Leu Ala Val Asn 50 55 60

Gly Arg Ser Thr Ser Gly Met Ile His Ala Cys Leu Ala Arg Leu Leu 65 70 75 80

Lys Glu Leu Lys Gly Arg Ile Thr Leu Thr Ile Val Ser Trp Pro Gly 85 90 95

Thr Phe Leu

<210> 163

<211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 163

Leu Leu Thr Glu Glu Glu Ile Asn Leu Thr Arg Gly Pro Ser Gly Leu 5 10 15

Gly Phe Asn Ile Val Gly Gly Thr Asp Gln Gln Tyr Val Ser Asn Asp 20 25 30

Ser Gly Ile Tyr Val Ser Arg Ile Lys Glu Asn Gly Ala Ala Leu 35 40 45

Asp Gly Arg Leu Gln Glu Gly Asp Lys Ile Leu Ser Val Asn Gly Gln 50 55 60

Asp Leu Lys Asn Leu Leu His Gln Asp Ala Val Asp Leu Phe Arg Asn 65 70 75 80

Ala Gly Tyr Ala Val Ser Leu Arg Val Gln His Arg Leu Gln Val Gln

95

Asn Gly Ile His Ser 100

<210> 164

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 164

Pro Val Asp Ala Ile Arg Ile Leu Gly Ile His Lys Arg Ala Gly Glu
1 10 15

Pro Leu Gly Val Thr Phe Arg Val Glu Asn Asn Asp Leu Val Ile Ala 20 25 30

Arg Ile Leu His Gly Gly Met Ile Asp Arg Gln Gly Leu Leu His Val 35 40 45

Gly Asp Ile Ile Lys Glu Val Asn Gly His Glu Val Gly Asn Asn Pro 50 55 60

Lys Glu Leu Gln Glu Leu Leu Lys Asn Ile Ser Gly Ser Val Thr Leu 65 70 75 80

Lys Ile Leu Pro Ser Tyr Arg Asp Thr Ile Thr Pro Gln Gln 85 90

<210> 165

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 165

Gly Lys Arg Leu Asn Ile Gln Leu Lys Lys Gly Thr Glu Gly Leu Gly 1 5 10 15

Phe Ser Ile Thr Ser Arg Asp Val Thr Ile Gly Gly Ser Ala Pro Ile 20 25 30

Tyr Val Lys Asn Ile Leu Pro Arg Gly Ala Ala Ile Gln Asp Gly Arg 35 40 45

Leu Lys Ala Gly Asp Arg Leu Ile Glu Val Asn Gly Val Asp Leu Val Gly Lys Ser Gln Glu Glu Val Val Ser Leu Leu Arg Ser Thr Lys Met 80

Glu Gly Thr Val Ser Leu Leu Val Phe Arg Gln Glu Asp Ala 85

<210> 166
<211> 106
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 166

Ile Pro Asn Phe Ser Leu Asp Asp Met Val Lys Leu Val Glu Val Pro 1 5 10 15

Asn Asp Gly Gly Pro Leu Gly Ile His Val Val Pro Phe Ser Ala Arg 20 25 30

Gly Gly Arg Thr Leu Gly Leu Leu Val Lys Arg Leu Glu Lys Gly Gly 35 40 45

Lys Ala Glu His Glu Asn Leu Phe Arg Glu Asn Asp Cys Ile Val Arg 50 55 60

Ile Asn Asp Gly Asp Leu Arg Asn Arg Arg Phe Glu Gln Ala Gln His 65 70 75 80

Met Phe Arg Gln Ala Met Arg Thr Pro Ile Ile Trp Phe His Val Val 85 90 95

Pro Ala Ala Asn Lys Glu Gln Tyr Glu Gln 100 105

<210> 167

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 167

Pro Arg Glu Phe Leu Thr Phe Glu Val Pro Leu Asn Asp Ser Gly Ser 5 10 15 Ala Gly Leu Gly Val Ser Val Lys Gly Asn Arg Ser Lys Glu Asn His 20 25 30 Ala Asp Leu Gly Ile Phe Val Lys Ser Ile Ile Asn Gly Gly Ala Ala 40 45 Ser Lys Asp Gly Arg Leu Arg Val Asn Asp Gln Leu Ile Ala Val Asn 50 55 Gly Glu Ser Leu Leu Gly Lys Thr Asn Gln Asp Ala Met Glu Thr Leu 70 75 Arg Arg Ser Met Ser Thr Glu Gly Asn Lys Arg Gly Met Ile Gln Leu Ile Val Ala Ser Arg Ile Ser Lys Cys Asn Glu Leu Lys Ser Asn Ser 100 105 Ser <210> 168 <211> 99 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 168 Ile Ser Asn Lys Asn Ala Lys Lys Ile Lys Ile Asp Leu Lys Lys Gly 10 Pro Glu Gly Leu Gly Phe Thr Val Val Thr Arg Asp Ser Ser Ile His 25 Gly Pro Gly Pro Ile Phe Val Lys Asn Ile Leu Pro Lys Gly Ala Ala 35 40 Ile Lys Asp Gly Arg Leu Gln Ser Gly Asp Arg Ile Leu Glu Val Asn 55 Gly Arg Asp Val Thr Gly Arg Thr Gln Glu Glu Leu Val Ala Met Leu

70

Arg Ser Thr Lys Gln Gly Glu Thr Ala Ser Leu Val Ile Ala Arg Gln 90 Glu Gly His <210> 169 <211> 106 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 169 Ile Thr Ser Glu Gln Leu Thr Phe Glu Ile Pro Leu Asn Asp Ser Gly Ser Ala Gly Leu Gly Val Ser Leu Lys Gly Asn Lys Ser Arg Glu Thr Gly Thr Asp Leu Gly Ile Phe Ile Lys Ser Ile Ile His Gly Gly Ala 40 Ala Phe Lys Asp Gly Arg Leu Arg Met Asn Asp Gln Leu Ile Ala Val 50 Asn Gly Glu Ser Leu Leu Gly Lys Ser Asn His Glu Ala Met Glu Thr Leu Arg Arg Ser Met Ser Met Glu Gly Asn Ile Arg Gly Met Ile Gln Leu Val Ile Leu Arg Arg Pro Glu Arg Pro 100 105 <210> 170 <211> 104 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide

Ile Pro Arg Thr Lys Asp Thr Leu Ser Asp Met Thr Arg Thr Val Glu

5

Ile Ser Gly Glu Gly Gly Pro Leu Gly Ile His Val Val Pro Phe Phe 20 25 Ser Ser Leu Ser Gly Arg Ile Leu Gly Leu Phe Ile Arg Gly Ile Glu 40 Asp Asn Ser Arg Ser Lys Arg Glu Gly Leu Phe His Glu Asn Glu Cys Ile Val Lys Ile Asn Asn Val Asp Leu Val Asp Lys Thr Phe Ala Gln 75 70 Ala Gln Asp Val Phe Arg Gln Ala Met Lys Ser Pro Ser Val Leu Leu 90 His Val Leu Pro Pro Gln Asn Arg 100 <210> 171 <211> 104 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 171 Pro Glu Thr His Arg Arg Val Arg Leu His Lys His Gly Ser Asp Arg Pro Leu Gly Phe Tyr Ile Arg Asp Gly Met Ser Val Arg Val Ala Pro 25 Gln Gly Leu Glu Arg Val Pro Gly Ile Phe Ile Ser Arg Leu Val Arg 40 45 Gly Gly Leu Ala Glu Ser Thr Gly Leu Leu Ala Val Ser Asp Glu Ile Leu Glu Val Asn Gly Ile Glu Val Ala Gly Lys Thr Leu Asp Gln Val Thr Asp Met Met Val Ala Asn Ser His Asn Leu Ile Val Thr Val Lys 85 90 95

Pro Ala Asn Gln Arg Asn Asn Val 100

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<210> 172
<211> 120
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 172
Ile Pro Val Ser Ser Ile Ile Asp Val Asp Ile Leu Pro Glu Thr His
Arg Arg Val Arg Leu Tyr Lys Tyr Gly Thr Glu Lys Pro Leu Gly Phe
Tyr Ile Arg Asp Gly Ser Ser Val Arg Val Thr Pro His Gly Leu Glu
Lys Val Pro Gly Ile Phe Ile Ser Arg Leu Val Pro Gly Gly Leu Ala
                       55
Gln Ser Thr Gly Leu Leu Ala Val Asn Asp Glu Val Leu Glu Val Asn
                   70
                                       75
Gly Ile Glu Val Ser Gly Lys Ser Leu Asp Gln Val Thr Asp Met Met
               85
Ile Ala Asn Ser Arg Asn Leu Ile Ile Thr Val Arg Pro Ala Asn Gln
Arg Asn Asn Arg Ile His Arg Asp
<210> 173
<211> 111
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 173
Ile Asp Val Asp Leu Val Pro Glu Thr His Arg Arg Val Arg Leu His
1 5
Arg His Gly Cys Glu Lys Pro Leu Gly Phe Tyr Ile Arg Asp Gly Ala
```

Ser Val Arg Val Thr Pro His Gly Leu Glu Lys Val Pro Gly Ile Phe 35 40 45

Ile Ser Arg Met Val Pro Gly Gly Leu Ala Glu Ser Thr Gly Leu Leu 50 55 60

Ala Val Asn Asp Glu Val Leu Glu Val Asn Gly Ile Glu Val Ala Gly 65 70 . 75 80

Lys Thr Leu Asp Gln Val Thr Asp Met Met Ile Ala Asn Ser His Asn 85 90 95

Leu Ile Val Thr Val Lys Pro Ala Asn Gln Arg Asn Asn Val Val 100 105 110

<210> 174

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 174

Pro Glu Gln Ile Met Gly Lys Asp Val Arg Leu Leu Arg Ile Lys Lys

10 15

Glu Gly Ser Leu Asp Leu Ala Leu Glu Gly Gly Val Asp Ser Pro Ile 20 25 30

Gly Lys Val Val Ser Ala Val Tyr Glu Arg Gly Ala Ala Glu Arg 35 40 45

His Gly Gly Ile Val Lys Gly Asp Glu Ile Met Ala Ile Asn Gly Lys 50 55 60

Ile Val Thr Asp Tyr Thr Leu Ala Glu Ala Asp Ala Ala Leu Gln Lys 70 75 80

Ala Trp Asn Gln Gly Gly Asp Trp Ile Asp Leu Val Val Ala Val Cys 85 90 95

Pro Pro Lys Glu Tyr Asp Asp 100

<210> 175

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<211> 102
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 175
Ile Pro Gly Asn Arg Glu Asn Lys Glu Lys Lys Val Phe Ile Ser Leu
                                   10
Val Gly Ser Arg Gly Leu Gly Cys Ser Ile Ser Ser Gly Pro Ile Gln
Lys Pro Gly Ile Phe Ile Ser His Val Lys Pro Gly Ser Leu Ser Ala
Glu Val Gly Leu Glu Ile Gly Asp Gln Ile Val Glu Val Asn Gly Val
Asp Phe Ser Asn Leu Asp His Lys Glu Ala Val Asn Val Leu Lys Ser
             70
Ser Arg Ser Leu Thr Ile Ser Ile Val Ala Ala Gly Arg Glu Leu
               85
                                   90
Phe Met Thr Asp Glu Phe
           100
<210> 176
<211> 100
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 176
Arg Ser Arg Lys Leu Lys Glu Val Arg Leu Asp Arg Leu His Pro Glu
Gly Leu Gly Leu Ser Val Arg Gly Gly Leu Glu Phe Gly Cys Gly Leu
Phe Ile Ser His Leu Ile Lys Gly Gly Gln Ala Asp Ser Val Gly Leu
```

60

Gln Val Gly Asp Glu Ile Val Arg Ile Asn Gly Tyr Ser Ile Ser Ser

55

Cys Thr His Glu Glu Val Ile Asn Leu Ile Arg Thr Lys Lys Thr Val 65 70 75 80

Ser Ile Lys Val Arg His Ile Gly Leu Ile Pro Val Lys Ser Ser Pro 85 90 95

Asp Glu Phe His

<210> 177

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 177

Arg Leu Cys Tyr Leu Val Lys Glu Gly Gly Ser Tyr Gly Phe Ser Leu 1 5 10 15

Lys Thr Val Gln Gly Lys Lys Gly Val Tyr Met Thr Asp Ile Thr Pro 20 25 30

Gln Gly Val Ala Met Arg Ala Gly Val Leu Ala Asp Asp His Leu Ile 35 40  $\cdot$  45

Glu Val Asn Gly Glu Asn Val Glu Asp Ala Ser His Glu Glu Val Val 50 60

Glu Lys Val Lys Lys Ser Gly Ser Arg Val Met Phe Leu Leu Val Asp 65 70 75 80

Lys Glu Thr Asp Lys Arg Glu Phe Ile Val Thr Asp  $85 \hspace{1cm} 90$ 

<210> 178

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 178

Gln Phe Lys Arg Glu Thr Ala Ser Leu Lys Leu Leu Pro His Gln Pro  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Arg Ile Val Glu Met Lys Lys Gly Ser Asn Gly Tyr Gly Phe Tyr Leu 20 25 30

Arg Ala Gly Ser Glu Gln Lys Gly Gln Ile Ile Lys Asp Ile Asp Ser 35 40 45

Gly Ser Pro Ala Glu Glu Ala Gly Leu Lys Asn Asn Asp Leu Val Val 50 55 60

Ala Val Asn Gly Glu Ser Val Glu Thr Leu Asp His Asp Ser Val Val 65 70 75 80

Glu Met Ile Arg Lys Gly Gly Asp Gln Thr Ser Leu Leu Val Val Asp 85 90 95

Lys Glu Thr Asp Asn Met Tyr Arg Leu Ala Glu Phe Ile Val Thr Asp  $100 \hspace{1.5cm} 105 \hspace{1.5cm} 110$ 

<210> 179

<211> 324

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 179

Arg Leu Cys Tyr Leu Val Lys Glu Gly Gly Ser Tyr Gly Phe Ser Leu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Lys Thr Val Gln Gly Lys Lys Gly Val Tyr Met Thr Asp Ile Thr Pro 20 25 30

Gln Gly Val Ala Met Arg Ala Gly Val Leu Ala Asp Asp His Leu Ile  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Glu Val Asn Gly Glu Asn Val Glu Asp Ala Ser His Glu Lys Val Val 50 60

Glu Lys Val Lys Lys Ser Gly Ser Arg Val Met Phe Leu Leu Val Asp
70 75 80

Lys Glu Thr Asp Lys Arg His Val Glu Gln Lys Ile Gln Phe Lys Arg 85 90 95

Glu Thr Ala Ser Leu Lys Leu Leu Pro His Gln Pro Arg Ile Val Glu

100 105 110

Met Lys Lys Gly Ser Asn Gly Tyr Gly Phe Tyr Leu Arg Ala Gly Ser 115 120 125

Glu Gln Lys Gly Gln Ile Ile Lys Asp Ile Asp Ser Gly Ser Pro Ala 130 135 140

Glu Glu Ala Gly Leu Lys Asn Asn Asp Leu Val Val Ala Val Asn Gly 145 150 155 160

Glu Ser Val Glu Thr Leu Asp His Asp Ser Val Val Glu Met Ile Arg 165 170 175

Lys Gly Gly Asp Gln Thr Ser Leu Leu Val Val Asp Lys Glu Thr Asp 180 185 190

Asn Met Tyr Arg Leu Ala His Phe Ser Pro Phe Leu Tyr Tyr Gln Ser 195 200 205

Gln Glu Leu Pro Asn Gly Ser Val Lys Glu Ala Pro Ala Pro Thr Pro 210 215 220

Thr Ser Leu Glu Val Ser Ser Pro Pro Asp Thr Thr Glu Glu Val Asp 225 230 235 240

His Lys Pro Lys Leu Cys Arg Leu Ala Lys Gly Glu Asn Gly Tyr Gly 245 250 255

Phe His Leu Asn Ala Ile Arg Gly Leu Pro Gly Ser Phe Ile Lys Glu 260 265 270

Val Gln Lys Gly Gly Pro Ala Asp Leu Ala Gly Leu Glu Asp Glu Asp 275 280 285

Val Ile Ile Glu Val Asn Gly Val Asn Val Leu Asp Glu Pro Tyr Glu 290 295 300

Lys Val Val Asp Arg Ile Gln Ser Ser Gly Lys Asn Val Thr Leu Leu 305 310 315 320

Val Cys Gly Lys

<210> 180 <211> 94

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<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 180
Pro Asp Thr Thr Glu Glu Val Asp His Lys Pro Lys Leu Cys Arg Leu
                                 10
Ala Lys Gly Glu Asn Gly Tyr Gly Phe His Leu Asn Ala Ile Arg Gly
Leu Pro Gly Ser Phe Ile Lys Glu Val Gln Lys Gly Gly Pro Ala Asp
                       40
Leu Ala Gly Leu Glu Asp Glu Asp Val Ile Ile Glu Val Asn Gly Val
Asn Val Leu Asp Glu Pro Tyr Glu Lys Val Val Asp Arg Ile Gln Ser
Ser Gly Lys Asn Val Thr Leu Leu Val Gly Lys Asn Ser Ser
               85
<210> 181
<211> 101
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 181
Leu Thr Ser Thr Phe Asn Pro Arg Glu Cys Lys Leu Ser Lys Gln Glu
Gly Gln Asn Tyr Gly Phe Phe Leu Arg Ile Glu Lys Asp Thr Glu Gly
, 20 25
His Leu Val Arg Val Val Glu Lys Cys Ser Pro Ala Glu Lys Ala Gly
       35
                          40 45
```

Leu Gln Asp Gly Asp Arg Val Leu Arg Ile Asn Gly Val Phe Val Asp

Lys Glu Glu His Met Gln Val Val Asp Leu Val Arg Lys Ser Gly Asn

Ser Val Thr Leu Leu Val Leu Asp Gly Asp Ser Tyr Glu Lys Ala Gly 85 90 95

Ser His Glu Pro Ser 100

<210> 182

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 182

Gln Asn Leu Ile Gly Ile Ser Ile Gly Gly Gly Ala Gln Tyr Cys Pro 20 25 30

Cys Leu Tyr Ile Val Gln Val Phe Asp Asn Thr Pro Ala Ala Leu Asp 35 40 45

Gly Thr Val Ala Ala Gly Asp Glu Ile Thr Gly Val Asn Gly Arg Ser 50 55 60

Ile Lys Gly Lys Thr Lys Val Glu Val Ala Lys Met Ile Gln Glu Val 65 70 75 80

Lys Gly Glu Val Thr Ile His Tyr Asn Lys Leu Gln Ala Asp Pro Lys 85 90 95

Gln Gly Met

<210> 183

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 183

Ser Gln Gly Val Gly Pro Ile Arg Lys Val Leu Leu Leu Lys Glu Asp 1 10 15 His Glu Gly Leu Gly Ile Ser Ile Thr Gly Gly Lys Glu His Gly Val 20 25 30

Pro Ile Leu Ile Ser Glu Ile His Pro Gly Gln Pro Ala Asp Arg Cys 35 40 45

Gly Gly Leu His Val Gly Asp Ala Ile Leu Ala Val Asn Gly Val Asn 50 55 60

Leu Arg Asp Thr Lys His Lys Glu Ala Val Thr Ile Leu Ser Gln Gln 65 . 70 75 80

Arg Gly Glu Ile Glu Phe Glu Val Val Tyr Val Ala Pro Glu Val Asp 85 90 95

Ser Asp

<210> 184

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 184

Thr Ala Glu Ala Thr Val Cys Thr Val Thr Leu Glu Lys Met Ser Ala  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Gly Leu Gly Phe Ser Leu Glu Gly Gly Lys Gly Ser Leu His Gly Asp 20 25 30

Lys Pro Leu Thr Ile Asn Arg Ile Phe Lys Gly Ala Ala Ser Glu Gln 35 40 45

Ser Glu Thr Val Gln Pro Gly Asp Glu Ile Leu Gln Leu Gly Gly Thr 50 55 60

Ala Met Gln Gly Leu Thr Arg Phe Glu Ala Trp Asn Ile Ile Lys Ala 65 70 75 80

Leu Pro Asp Gly Pro Val Thr Ile Val Ile Arg Arg Lys Ser Leu Gln

Ser Lys

```
<210> 185
<211> 97
<212> PRT
      Artificial Sequence
<220>
<223> Synthetic peptide
<400> 185
Ile His Val Thr Ile Leu His Lys Glu Glu Gly Ala Gly Leu Gly Phe
Ser Leu Ala Gly Gly Ala Asp Leu Glu Asn Lys Val Ile Thr Val His
Arg Val Phe Pro Asn Gly Leu Ala Ser Gln Glu Gly Thr Ile Gln Lys
Gly Asn Glu Val Leu Ser Ile Asn Gly Lys Ser Leu Lys Gly Thr Thr
    50
                        55
His His Asp Ala Leu Ala Ile Leu Arg Gln Ala Arg Glu Pro Arg Gln
Ala Val Ile Val Thr Arg Lys Leu Thr Pro Glu Glu Phe Ile Val Thr
Asp
<210> 186
<211> 214
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 186
Ile His Val Thr Ile Leu His Lys Glu Glu Gly Ala Gly Leu Gly Phe
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Arg Val Phe Pro Asn Gly Leu Ala Ser Gln Glu Gly Thr Ile Gln Lys 35 40 45

Ser Leu Ala Gly Gly Ala Asp Leu Glu Asn Lys Val Ile Thr Val His

Gly Asn Glu Val Leu Ser Ile Asn Gly Lys Ser Leu Lys Gly Thr Thr 50 55 60 His His Asp Ala Leu Ala Ile Leu Arg Gln Ala Arg Glu Pro Arg Gln Ala Val Ile Val Thr Arg Lys Leu Thr Pro Glu Ala Met Pro Asp Leu 90 Asn Ser Ser Thr Asp Ser Ala Ala Ser Ala Ser Ala Ala Ser Asp Val 105 Ser Val Glu Ser Thr Ala Glu Ala Thr Val Cys Thr Val Thr Leu Glu 120 Lys Met Ser Ala Gly Leu Gly Phe Ser Leu Glu Gly Gly Lys Gly Ser Leu His Gly Asp Lys Pro Leu Thr Ile Asn Arg Ile Phe Lys Gly Ala 150 155 Ala Ser Glu Gln Ser Glu Thr Val Gln Pro Gly Asp Glu Ile Leu Gln Leu Gly Gly Thr Ala Met Gln Gly Leu Thr Arg Phe Glu Ala Trp Asn Ile Ile Lys Ala Leu Pro Asp Gly Pro Val Thr Ile Val Ile Arg Arg 200 Lys Ser Leu Gln Ser Lys 210 <210> 187 <211> 162 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 187 Ile Arg Glu Ala Lys Tyr Ser Gly Val Leu Ser Ser Ile Gly Lys Ile

10

Phe Lys Glu Glu Gly Leu Leu Gly Phe Phe Val Gly Leu Ile Pro His

25

20

15

Leu Leu Gly Asp Val Val Phe Leu Trp Gly Cys Asn Leu Leu Ala His 40 Phe Ile Asn Ala Tyr Leu Val Asp Asp Ser Val Ser Asp Thr Pro Gly 55 Gly Leu Gly Asn Asp Gln Asn Pro Gly Ser Gln Phe Ser Gln Ala Leu Ala Ile Arg Ser Tyr Thr Lys Phe Val Met Gly Ile Ala Val Ser Met Leu Thr Tyr Pro Phe Leu Leu Val Gly Asp Leu Met Ala Val Asn Asn 105 Cys Gly Leu Gln Ala Gly Leu Pro Pro Tyr Ser Pro Val Phe Lys Ser 115 120 Trp Ile His Cys Trp Lys Tyr Leu Ser Val Gln Gly Gln Leu Phe Arg 135 Gly Ser Ser Leu Leu Phe Arg Arg Val Ser Ser Gly Ser Cys Phe Ala 150 Leu Glu <210> 188 <211> 338 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 188 Glu Gly Glu Met Glu Tyr Glu Glu Ile Thr Leu Glu Arg Gly Asn Ser Gly Leu Gly Phe Ser Ile Ala Gly Gly Thr Asp Asn Pro His Ile Gly 20 25

Asp Asp Pro Ser Ile Phe Ile Thr Lys Ile Ile Pro Gly Gly Ala Ala

40

Ala	Gln 50	Asp	Gly	Arg	Leu	Arg 55	Val	Asn	Asp	Ser	Ile 60	Leu	Phe	Val	Asn
Glu 65	Val	Asp	Val	Arg	Glu 70	Val	Thr	His	Ser	Ala 75	Ala	Val	Glu	Ala	Leu 80
Lys	Glu	Ala	Gly	Ser 85	Ile	Val	Arg	Leu	Tyr 90	Val	Met	Arg	Arg	Lys 95	Pro
Pro	Ala	Glu	Lys 100	Val	Met	Glu	Ile	Lys 105	Leu	Ile	Lys	Gly	Pro 110	Lys	Gly
Leu	Gly	Phe 115	Ser	Ile	Ala	Gly	Gly 120	Val	Gly	Asn	Gln	His 125	Ile	Pro	Gly
Asp	Asn 130	Ser	Ile	Tyr	Val	Thr 135	Lys	Ile	Ile	Glu	Gly 140	Gly	Ala	Ala	His
Lys 145	Asp	Gly	Arg	Leu	Gln 150	Ile	Gly	Asp	Lys	Ile 155	Leu	Ala	Val	Asn	Ser 160
Val	Gly	Leu	Glu	Asp 165	Val	Met	His	Glu	Asp 170	Ala	Val	Ala	Ala	Leu 175	Lys
Asn	Thr	Tyr	Asp 180	Val	Val	Tyr	Leu	Lys 185	Val	Ala	Lys	Pro	Ser 190	Asn	Ala
Tyr	Leu	Ser 195	Asp	Ser	Tyr	Ala	Pro 200	Pro	Asp	Ile	Thr	Thr 205	Ser	Tyr	Ser
Gln	His 210	Leu	Asp	Asn	Glu	Ile 215		His	Ser	Ser	Tyr 220		Gly	Thr	Asp
Tyr 225	Pro	Thr	Ala	Met	Thr 230	Pro	Thr	Ser	Pro	Arg 235	Arg	Tyr	Ser	Pro	Val 240
Ala	Lys	Asp	Leu	Leu 245	Gly	Glu	Glu	Asp	Ile 250	Pro	Arg	Glu	Pro	Arg 255	Arg
Ile	Val	Ile	His 260	Arg	Gly	Ser	Thr	Gly 265	Leu	Gly	Phe	Asn	Ile 270	Val	Gly
Gly	Glu	Asp 275	Gly	Glu	Gly	Ile	Phe 280	Ile	Ser	Phe	Ile	Leu 285	Ala	Gly	Gly
Pro	Ala	Asp	Leu	Ser	Gly	Glu	Leu	Arg	Lys	Gly	Asp	Gln	Ile	Leu	Ser

290 295 300

Val Asn Gly Val Asp Leu Arg Asn Ala Ser His Glu Gln Ala Ala Ile 305 310 315 320

Ala Leu Lys Asn Ala Gly Gln Thr Val Thr Ile Ile Ala Gln Tyr Lys 325 330 335

Pro Glu

<210> 189

<211> 105

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 189

His Val Met Arg Arg Lys Pro Pro Ala Glu Lys Val Met Glu Ile Lys
1 10 15

Leu Ile Lys Gly Pro Lys Gly Leu Gly Phe Ser Ile Ala Gly Gly Val 20 25 30

Gly Asn Gln His Ile Pro Gly Asp Asn Ser Ile Tyr Val Thr Lys Ile  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Ile Glu Gly Gly Ala Ala His Lys Asp Gly Arg Leu Gln Ile Gly Asp 50 55 60

Lys Ile Leu Ala Val Asn Ser Val Gly Leu Glu Asp Val Met His Glu 65 70 75 80

Asp Ala Val Ala Leu Lys Asn Thr Tyr Asp Val Val Tyr Leu Lys 85 90 95

Val Ala Lys Pro Ser Asn Ala Tyr Leu 100 105

<210> 190

<211> 97

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 190

Arg Glu Asp Ile Pro Arg Glu Pro Arg Arg Ile Val Ile His Arg Gly
1 10 15

Ser Thr Gly Leu Gly Phe Asn Ile Val Gly Gly Glu Asp Gly Glu Gly 20 25 30

Ile Phe Ile Ser Phe Ile Leu Ala Gly Gly Pro Ala Asp Leu Ser Gly 35 40 45

Glu Leu Arg Lys Gly Asp Gln Ile Leu Ser Val Asn Gly Val Asp Leu 50 55 60

Arg Asn Ala Ser His Glu Gln Ala Ala Ile Ala Leu Lys Asn Ala Gly 65 70 75 80

Gln Thr Val Thr Ile Ile Ala Gln Tyr Lys Pro Glu Phe Ile Val Thr 85 90 95

Asp

<210> 191

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 191

Leu Glu Tyr Glu Glu Ile Thr Leu Glu Arg Gly Asn Ser Gly Leu Gly 1 5 10 15

Phe Ser Ile Ala Gly Gly Thr Asp Asn Pro His Ile Gly Asp Asp Pro 20 25 30

Ser Ile Phe Ile Thr Lys Ile Ile Pro Gly Gly Ala Ala Ala Gln Asp  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Gly Arg Leu Arg Val Asn Asp Ser Ile Leu Phe Val Asn Glu Val Asp 50 55 60

Val Arg Glu Val Thr His Ser Ala Ala Val Glu Ala Leu Lys Glu Ala 65 70 75 80

Gly Ser Ile Val Arg Leu Tyr Val Met Arg Arg Lys Pro Pro Ala Glu 85 90 95

Asn Ser Ser

<210> 192

<211> 88

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 192

Arg Asp Met Ala Glu Ala His Lys Glu Ala Met Ser Arg Lys Leu Gly  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gln Ser Glu Ser Gln Gly Pro Pro Arg Ala Phe Ala Lys Val As<br/>n Ser 20 25 30

Ile Ser Pro Gly Ser Pro Ala Ser Ile Ala Gly Leu Gln Val Asp Asp 35 40 45

Glu Ile Val Glu Phe Gly Ser Val Asn Thr Gln Asn Phe Gln Ser Leu 50 60

His Asn Ile Gly Ser Val Val Gln His Ser Glu Gly Ala Leu Ala Pro 65 70 75 80

Thr Ile Leu Leu Ser Val Ser Met 85

<210> 193

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 193

Gln Asn Asp Asn Gly Asp Ser Tyr Leu Val Leu Ile Arg Ile Thr Pro  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Asp Glu Asp Gly Lys Phe Gly Phe Asn Leu Lys Gly Gly Val Asp Gln 20 25 30

Lys Met Pro Leu Val Val Ser Arg Ile Asn Pro Glu Ser Pro Ala Asp

35 40 45

Thr Cys Ile Pro Lys Leu Asn Glu Gly Asp Gln Ile Val Leu Ile Asn 50 55 60

Gly Arg Asp Ile Ser Glu His Thr His Asp Gln Val Val Met Phe Ile 70 75 80

Lys Ala Ser Arg Glu Ser His Ser Arg Glu Leu Ala Leu Val Ile Arg 85 90 95

Arg Arg Ala Val Arg Ser 100

<210> 194

<211> 88

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 194

Ile Arg Met Lys Pro Asp Glu Asn Gly Arg Phe Gly Phe Asn Val Lys  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Gly Tyr Asp Gln Lys Met Pro Val Ile Val Ser Arg Val Ala Pro 20 25 30

Gly Thr Pro Ala Asp Leu Cys Val Pro Arg Leu Asn Glu Gly Asp Gln 35 40 45

Val Val Leu Ile Asn Gly Arg Asp Ile Ala Glu His Thr His Asp Gln 50 55 60

Val Val Leu Phe Ile Lys Ala Ser Cys Glu Arg His Ser Gly Glu Leu 65 70 75 80

Met Leu Leu Val Arg Pro Asn Ala 85

<210> 195

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 195

Gly Asp Ile Phe Glu Val Glu Leu Ala Lys Asn Asp Asn Ser Leu Gly  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ile Ser Val Thr Gly Gly Val Asn Thr Ser Val Arg His Gly Gly Ile 20 25 30

Tyr Val Lys Ala Val Ile Pro Gln Gly Ala Ala Glu Ser Asp Gly Arg 35 40 45

Ile His Lys Gly Asp Arg Val Leu Ala Val Asn Gly Val Ser Leu Glu
50 55 60

Gly Ala Thr His Lys Gln Ala Val Glu Thr Leu Arg Asn Thr Gly Gln 65 70 75 80

Val Val His Leu Leu Glu Lys Gly Gln Ser Pro Thr Ser Lys 85 90 95

<210> 196

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 196

Pro Glu Arg Glu Ile Thr Leu Val Asn Leu Lys Lys Asp Ala Lys Tyr 5 10 15

Gly Leu Gly Phe Gln Ile Ile Gly Gly Glu Lys Met Gly Arg Leu Asp 20 25 30

Leu Gly Ile Phe Ile Ser Ser Val Ala Pro Gly Gly Pro Ala Asp Phe 35 40 45

His Gly Cys Leu Lys Pro Gly Asp Arg Leu Ile Ser Val Asn Ser Val 50 55 60

Ser Leu Glu Gly Val Ser His His Ala Ala Ile Glu Ile Leu Gln Asn 65 70 75 80

Ala Pro Glu Asp Val Thr Leu Val Ile Ser Gln Pro Lys Glu Lys Ile
85 90 95

Ser Lys Val Pro Ser Thr Pro Val His Leu

100 105

<210> 197

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 197

Glu Leu Glu Val Glu Leu Leu Ile Thr Leu Ile Lys Ser Glu Lys Ala 1 5 10 15

Ser Leu Gly Phe Thr Val Thr Lys Gly Asn Gln Arg Ile Gly Cys Tyr 20 25 30

Val His Asp Val Ile Gln Asp Pro Ala Lys Ser Asp Gly Arg Leu Lys 35 40 45

Pro Gly Asp Arg Leu Ile Lys Val Asn Asp Thr Asp Val Thr Asn Met 50 55 60

Thr His Thr Asp Ala Val Asn Leu Leu Arg Ala Ala Ser Lys Thr Val 65 70 75 80

Arg Leu Val Ile Gly Arg Val Leu Glu Leu Pro Arg Ile Pro Met Leu 85 90 95

Pro His

<210> 198

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 198

Thr Glu Glu Asn Thr Phe Glu Val Lys Leu Phe Lys Asn Ser Ser Gly 1 5 10 15

Leu Gly Phe Ser Phe Ser Arg Glu Asp Asn Leu Ile Pro Glu Gln Ile 20 25 30

Asn Ala Ser Ile Val Arg Val Lys Lys Leu Phe Ala Gly Gln Pro Ala 35 40 45

Ala Glu Ser Gly Lys Ile Asp Val Gly Asp Val Ile Leu Lys Val Asn 50 60

Gly Ala Ser Leu Lys Gly Leu Ser Gln Gln Glu Val Ile Ser Ala Leu 65 70 75 80

Arg Gly Thr Ala Pro Glu Val Phe Leu Leu Leu Cys Arg Pro Pro Pro 85 90 95

Gly Val Leu Pro Glu Ile Asp Thr 100

<210> 199

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 199

Met Leu Pro His Leu Leu Pro Asp Ile Thr Leu Thr Cys Asn Lys Glu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Glu Leu Gly Phe Ser Leu Cys Gly Gly His Asp Ser Leu Tyr Gln Val 20 25 30

Val Tyr Ile Ser Asp Ile Asn Pro Arg Ser Val Ala Ala Ile Glu Gly  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Asn Leu Gln Leu Leu Asp Val Ile His Tyr Val Asn Gly Val Ser Thr 50 60

Gln Gly Met Thr Leu Glu Glu Val Asn Arg Ala Leu Asp Met Ser Leu 65 70 75 80

Pro Ser Leu Val Leu Lys Ala Thr Arg Asn Asp Leu Pro Val

<210> 200

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 200

Val Cys Ser Glu Arg Arg Tyr Arg Gln Ile Thr Ile Pro Arg Gly Lys
1 10 15

Asp Gly Phe Gly Phe Thr Ile Cys Cys Asp Ser Pro Val Arg Val Gln 20 25 30

Ala Val Asp Ser Gly Gly Pro Ala Glu Arg Ala Gly Leu Gln Gln Leu 35 40 45

Asp Thr Val Leu Gln Leu Asn Glu Arg Pro Val Glu His Trp Lys Cys 50 55 60

Val Glu Leu Ala His Glu Ile Arg Ser Cys Pro Ser Glu Ile Ile Leu 65 70 75 80

Leu Val Trp Arg Met Val Pro Gln Val Lys Pro Gly 85 90

<210> 201

<211> 93

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 201

Arg Pro Ser Pro Pro Arg Val Arg Ser Val Glu Val Ala Arg Gly Arg

1 10 15

Ala Gly Tyr Gly Phe Thr Leu Ser Gly Gln Ala Pro Cys Val Leu Ser 20 25 30

Cys Val Met Arg Gly Ser Pro Ala Asp Phe Val Gly Leu Arg Ala Gly 35 40 45

Asp Gln Ile Leu Ala Val Asn Glu Ile Asn Val Lys Lys Ala Ser His 50 60

Glu Asp Val Val Lys Leu Ile Gly Lys Cys Ser Gly Val Leu His Met 65 . 70 . 75 . 80

<210> 202 <211> 124

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<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 202
Ser Glu Asp Glu Thr Phe Ser Trp Pro Gly Pro Lys Thr Val Thr Leu
Lys Arg Thr Ser Gln Gly Phe Gly Phe Thr Leu Arg His Phe Ile Val
```

Tyr Pro Pro Glu Ser Ala Ile Gln Phe Ser Tyr Lys Asp Glu Glu Asn

25

Gly Asn Arg Gly Gly Lys Gln Arg Asn Arg Leu Glu Pro Met Asp Thr

Ile Phe Val Lys Gln Val Lys Glu Gly Pro Ala Phe Glu Ala Gly 75 70

Leu Cys Thr Gly Asp Arg Ile Ile Lys Val Asn Gly Glu Ser Val Ile 85 90

Gly Lys Thr Tyr Ser Gln Val Ile Ala Leu Ile Gln Asn Ser Asp Thr 100

Thr Leu Glu Leu Ser Val Met Pro Lys Asp Glu Asp 120

<210> 203 <211> 96 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide

<400> 203

Ser Ala Lys Asn Arg Trp Arg Leu Val Gly Pro Val His Leu Thr Arg 5

Gly Glu Gly Phe Gly Leu Thr Leu Arg Gly Asp Ser Pro Val Leu

Ile Ala Ala Val Ile Pro Gly Ser Gln Ala Ala Ala Ala Gly Leu Lys

Glu Gly Asp Tyr Ile Val Ser Val Asn Gly Gln Pro Cys Arg Trp Trp 50 55 60

Arg His Ala Glu Val Val Thr Glu Leu Lys Ala Ala Gly Glu Ala Gly 65 70 75 80

Ala Ser Leu Gl<br/>n Val Val Ser Leu Leu Pro Ser Ser Arg Leu Pro Ser 85 90 95

<210> 204

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 204

Ile Ser Phe Ser Ala Asn Lys Arg Trp Thr Pro Pro Arg Ser Ile Arg 1 5 10 15

Phe Thr Ala Glu Glu Gly Asp Leu Gly Phe Thr Leu Arg Gly Asn Ala 20 25 30

Pro Val Gln Val His Phe Leu Asp Pro Tyr Cys Ser Ala Ser Val Ala 35 40 45

Gly Ala Arg Glu Gly Asp Tyr Ile Val Ser Ile Gln Leu Val Asp Cys 50 55 60

Lys Trp Leu Thr Leu Ser Glu Val Met Lys Leu Leu Lys Ser Phe Gly 65 70 75 80

Glu Asp Glu Ile Glu Met Lys Val Val Ser Leu Leu Asp Ser Thr Ser 85 90 95

Ser Met His Asn Lys Ser Ala Thr 100

<210> 205

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 205

Thr Leu Asn Glu Glu His Ser His Ser Asp Lys His Pro Val Thr Trp 10 Gln Pro Ser Lys Asp Gly Asp Arg Leu Ile Gly Arg Ile Leu Leu Asn 25 Lys Arg Leu Lys Asp Gly Ser Val Pro Arg Asp Ser Gly Ala Met Leu Gly Leu Lys Val Val Gly Gly Lys Met Thr Glu Ser Gly Arg Leu Cys Ala Phe Ile Thr Lys Val Lys Lys Gly Ser Leu Ala Asp Thr Val Gly His Leu Arg Pro Gly Asp Glu Val Leu Glu Trp Asn Gly Arg Leu Leu Gln Gly Ala Thr Phe Glu Glu Val Tyr Asn Ile Ile Leu Glu Ser Lys 105 Pro Glu Pro Gln Val Glu Leu Val Val Ser Arg Pro Ile Gly 115 120 <210> 206 <211> 101 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 206 Gln Glu Met Asp Arg Glu Glu Leu Glu Leu Glu Glu Val Asp Leu Tyr 5 Arg Met Asn Ser Gln Asp Lys Leu Gly Leu Thr Val Cys Tyr Arg Thr 20 25 30 Asp Asp Glu Asp Asp Ile Gly Ile Tyr Ile Ser Glu Ile Asp Pro Asn 35 Ser Ile Ala Ala Lys Asp Gly Arg Ile Arg Glu Gly Asp Arg Ile Ile Gln Ile Asn Gly Ile Glu Val Gln Asn Arg Glu Glu Ala Val Ala Leu

Leu Thr Ser Glu Glu Asn Lys Asn Phe Ser Leu Leu Ile Ala Arg Pro 85 90 95

Glu Leu Gln Leu Asp .100

<210> 207

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 207

Gln Gly Glu Glu Thr Lys Ser Leu Thr Leu Val Leu His Arg Asp Ser  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Ser Leu Gly Phe Asn Ile Ile Gly Gly Arg Pro Ser Val Asp Asn 20 25 30

His Asp Gly Ser Ser Ser Glu Gly Ile Phe Val Ser Lys Ile Val Asp 35 40 45

Ser Gly Pro Ala Ala Lys Glu Gly Gly Leu Gln Ile His Asp Arg Ile  $\cdot$  50 55 60

Ile Glu Val Asn Gly Arg Asp Leu Ser Arg Ala Thr His Asp Gln Ala 65 70 75 80

Val Glu Ala Phe Lys Thr Ala Lys Glu Pro Ile Val Val Gln Val Leu 85 90 95

Arg Arg Thr Pro Arg Thr Lys Met Phe Thr Pro

<210> 208

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 208

Ile Leu Ala His Val Lys Gly Ile Glu Lys Glu Val Asn Val Tyr Lys
1 10 15

Ser Glu Asp Ser Leu Gly Leu Thr Ile Thr Asp Asn Gly Val Gly Tyr 20 25 30

Ala Phe Ile Lys Arg Ile Lys Asp Gly Gly Val Ile Asp Ser Val Lys 35 40 45

Thr Ile Cys Val Gly Asp His Ile Glu Ser Ile Asn Gly Glu Asn Ile 50 60

Val Gly Trp Arg His Tyr Asp Val Ala Lys Lys Leu Lys Glu Leu Lys 65 70 75 80

Lys Glu Glu Leu Phe Thr Met Lys Leu Ile Glu Pro Lys Lys Ala Phe 85 90 95

Glu Ile

<210> 209

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 209

Arg Gly Glu Lys Lys Asn Ser Ser Ser Gly Ile Ser Gly Ser Gln Arg 1 5 10 15

Arg Tyr Ile Gly Val Met Met Leu Thr Leu Ser Pro Ser Ile Leu Ala 20 25 30

Glu Leu Gln Leu Arg Glu Pro Ser Phe Pro Asp Val Gln His Gly Val 35 40 45

Leu Ile His Lys Val Ile Leu Gly Ser Pro Ala His Arg Ala Gly Leu 50 55 60

Arg Pro Gly Asp Val Ile Leu Ala Ile Gly Glu Gln Met Val Gln Asn 70 75 80

Ala Glu Asp Val Tyr Glu Ala Val Arg Thr Gln Ser Gln Leu Ala Val 85 90 95

Gln Ile Arg Arg Gly Arg Glu Thr Leu Thr Leu Tyr Val

100 105

<210> 210

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 210

Ile Leu Glu Glu Lys Thr Val Val Leu Gln Lys Lys Asp Asn Glu Gly 1  $\phantom{-}$  5  $\phantom{-}$  10  $\phantom{-}$  15

Phe Gly Phe Val Leu Arg Gly Ala Lys Ala Asp Thr Pro Ile Glu Glu 20 25 30

Phe Thr Pro Thr Pro Ala Phe Pro Ala Leu Gln Tyr Leu Glu Ser Val 35 40 45

Asp Glu Gly Gly Val Ala Trp Gln Ala Gly Leu Arg Thr Gly Asp Phe 50 60

Leu Ile Glu Val Asn Asn Glu Asn Val Val Lys Val Gly His Arg Gln 65 70 75 80

Val Val Asn Met Ile Arg Gln Gly Gly Asn His Leu Val Leu Lys Val 85 90 95

Val Thr Val Thr Arg Asn Leu Asp Pro Asp Asp Asn Ser Ser 100 105 110

<210> 211

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 211

Ile Leu Lys Glu Lys Thr Val Leu Leu Gln Lys Lys Asp Ser Glu Gly 1 5 10 15

Phe Gly Phe Val Leu Arg Gly Ala Lys Ala Gln Thr Pro Ile Glu Glu 20 25 30

Phe Thr Pro Thr Pro Ala Phe Pro Ala Leu Gln Tyr Leu Glu Ser Val 35 40 45

Asp Glu Gly Gly Val Ala Trp Arg Ala Gly Leu Arg Met Gly Asp Phe 50 55 60

Leu Ile Glu Val Asn Gly Gln Asn Val Val Lys Val Gly His Arg Gln 65 70 75 80

Val Val Asn Met Ile Arg Gln Gly Gly Asn Thr Leu Met Val Lys Val 85 90 95

Val Met Val Thr Arg His Pro Asp Met Asp Glu Ala Val Gln Asn Ser 100 105 110

Ser

<210> 212

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 212

Ser Asp Tyr Val Ile Asp Asp Lys Val Ala Val Leu Gln Lys Arg Asp  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

His Glu Gly Phe Gly Phe Val Leu Arg Gly Ala Lys Ala Glu Thr Pro 20 25 30

Ile Glu Glu Phe Thr Pro Thr Pro Ala Phe Pro Ala Leu Gln Tyr Leu 35 40 45

Glu Ser Val Asp Val Glu Gly Val Ala Trp Arg Ala Gly Leu Arg Thr 50 60

Gly Asp Phe Leu Ile Glu Val Asn Gly Val Asn Val Val Lys Val Gly 65 70 75 80

His Lys Gln Val Val Ala Leu Ile Arg Gln Gly Gly Asn Arg Leu Val 85 90 95

Met Lys Val Val Ser Val Thr Arg Lys Pro Glu Glu Asp Gly 100 105

<210> 213

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<211> 98
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 213

Ser Asn Ser Pro Arg Glu Gl
1 5

Asp Ser Gly Glu Gln Leu Gl
20

Pro Gly Val Phe Ile Leu As
35

Asp Gly Arg Leu Ser Ser As
50 55

Asp Leu Lys Tyr Gly Thr Pr
65
```

Ser Asn Ser Pro Arg Glu Glu Ile Phe Gln Val Ala Leu His Lys Arg 1 5 10 15

Asp Ser Gly Glu Gln Leu Gly Ile Lys Leu Val Arg Arg Thr Asp Glu 20 25 30

Pro Gly Val Phe Ile Leu Asp Leu Leu Glu Gly Gly Leu Ala Ala Gln 35 40 45

Asp Gly Arg Leu Ser Ser Asn Asp Arg Val Leu Ala Ile Asn Gly His 50 55 60

Asp Leu Lys Tyr Gly Thr Pro Glu Leu Ala Ala Gln Ile Ile Gln Ala 65 70 75 80.

Ser Gly Glu Arg Val Asn Leu Thr Ile Ala Arg Pro Gly Lys Pro Gln 85 90 95

Pro Gly

<210> 214 <211> 104 <212> PRT

<212> PRT <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 214

Ile Gln Cys Val Thr Cys Gln Glu Lys His Ile Thr Val Lys Lys Glu 1 5 10 15

Pro His Glu Ser Leu Gly Met Thr Val Ala Gly Gly Arg Gly Ser Lys 20 25 30

Ser Gly Glu Leu Pro Ile Phe Val Thr Ser Val Pro Pro His Gly Cys 35 40 45

Leu Ala Arg Asp Gly Arg Ile Lys Arg Gly Asp Val Leu Leu Asn Ile 50 55 60

Asn Gly Ile Asp Leu Thr Asn Leu Ser His Ser Glu Ala Val Ala Met 65 70 75 80

Leu Lys Ala Ser Ala Ala Ser Pro Ala Val Ala Leu Lys Ala Leu Glu 85 90 95

Val Gln Ile Val Glu Glu Ala Thr 100

<210> 215

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 215

Phe His Leu His Gly Val Gln Glu Asn Ser Pro Ala Gln Gln Ala Gly 20 25 30

Leu Glu Pro Tyr Phe Asp Phe Ile Ile Thr Ile Gly His Ser Arg Leu  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Asn Lys Glu Asn Asp Thr Leu Lys Ala Leu Leu Lys Ala Asn Val Glu 50 60

Lys Pro Val Lys Leu Glu Val Phe Asn Met Lys Thr Met Arg Val Arg 65 70 75 80

Glu Val Glu Val Pro Ser Asn Met Trp Gly Gly Gln Gly Leu Leu 85 90 95

Gly Ala Ser Val Arg Phe Cys Ser Phe Arg Arg Ala Ser Glu 100 105 110

<210> 216

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 216

Arg Ala Ser Glu Gln Val Trp His Val Leu Asp Val Glu Pro Ser Ser 5 10 Pro Ala Ala Leu Ala Gly Leu Arg Pro Tyr Thr Asp Tyr Val Val Gly 25 Ser Asp Gln Ile Leu Gln Glu Ser Glu Asp Phe Phe Thr Leu Ile Glu Ser His Glu Gly Lys Pro Leu Lys Leu Met Val Tyr Asn Ser Lys Ser 55 Asp Ser Cys Arg Glu Ser Gly Met Trp His Trp Leu Trp Val Ser Thr Pro Asp Pro Asn Ser Ala Pro Gln Leu Pro Gln Glu Ala Thr Trp His Pro Thr Thr Phe Cys Ser Thr Thr Trp Cys Pro Thr Thr 105 100 <210> 217 <211> 101 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 217 Ile Ser Val Thr Asp Gly Pro Lys Phe Glu Val Lys Leu Lys Lys Asn Ala Asn Gly Leu Gly Phe Ser Phe Val Gln Met Glu Lys Glu Ser Cys 25 Ser His Leu Lys Ser Asp Leu Val Arg Ile Lys Arg Leu Phe Pro Gly 40 Gln Pro Ala Glu Glu Asn Gly Ala Ile Ala Ala Gly Asp Ile Ile Leu 5.5 Ala Val Asn Gly Arg Ser Thr Glu Gly Leu Ile Phe Gln Glu Val Leu His Leu Leu Arg Gly Ala Pro Gln Glu Val Thr Leu Leu Leu Cys Arg 85 90

Pro Pro Pro Gly Ala 100 <210> 218 <211> 100 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 218 Gln Pro Glu Pro Leu Arg Pro Arg Leu Cys Arg Leu Val Arg Gly Glu 5 10 Gln Gly Tyr Gly Phe His Leu His Gly Glu Lys Gly Arg Arg Gly Gln Phe Ile Arg Arg Val Glu Pro Gly Ser Pro Ala Glu Ala Ala Leu 40 Arg Ala Gly Asp Arg Leu Val Glu Val Asn Gly Val Asn Val Glu Gly Glu Thr His His Gln Val Val Gln Arg Ile Lys Ala Val Glu Gly Gln Thr Arg Leu Leu Val Val Asp Gln Glu Thr Asp Glu Glu Leu Arg Arg 90 Arg Asn Ser Ser 100 <210> 219 <211> 99 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 219 Pro Leu Arg Glu Leu Arg Pro Arg Leu Cys His Leu Arg Lys Gly Pro

Gln Gly Tyr Gly Phe Asn Leu His Ser Asp Lys Ser Arg Pro Gly Gln

25

Tyr Ile Arg Ser Val Asp Pro Gly Ser Pro Ala Ala Arg Ser Gly Leu 35 40 45

Arg Ala Gln Asp Arg Leu Ile Glu Val Asn Gly Gln Asn Val Glu Gly 50 55 60

Leu Arg His Ala Glu Val Val Ala Ser Ile Lys Ala Arg Glu Asp Glu 65 70 75 80

Ala Arg Leu Leu Val Val Asp Pro Glu Thr Asp Glu His Phe Lys Arg 85 90 95

Asn Ser Ser

<210> 220

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 220

Pro Gly Val Arg Glu Ile His Leu Cys Lys Asp Glu Arg Gly Lys Thr

5 10 15

Gly Leu Arg Leu Arg Lys Val Asp Gln Gly Leu Phe Val Gln Leu Val 20 25 30

Gln Ala Asn Thr Pro Ala Ser Leu Val Gly Leu Arg Phe Gly Asp Gln 35 40 45

Leu Leu Gln Ile Asp Gly Arg Asp Cys Ala Gly Trp Ser Ser His Lys 50 55 60

Ala His Gln Val Val Lys Lys Ala Ser Gly Asp Lys Ile Val Val 65 70 75 80

Val Arg Asp Arg Pro Phe Gln Arg Thr Val Thr Met 85 90

<210> 221

<211> 90

<212> PRT

<213> Artificial Sequence

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<220>
<223> Synthetic peptide
<400> 221

Pro Phe Gln Arg Thr Val
1 5
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Pro Phe Gln Arg Thr Val Thr Met His Lys Asp Ser Met Gly His Val 1 5 10 15

Gly Phe Val Ile Lys Lys Gly Lys Ile Val Ser Leu Val Lys Gly Ser 20 25 30

Ser Ala Ala Arg Asn Gly Leu Leu Thr Asn His Tyr Val Cys Glu Val 35 40 45

Asp Gly Gln Asn Val Ile Gly Leu Lys Asp Lys Lys Ile Met Glu Ile 50 55 60

Leu Ala Thr Ala Gly Asn Val Val Thr Leu Thr Ile Ile Pro Ser Val 65 70 75 80

Ile Tyr Glu His Ile Val Glu Phe Ile Val 85 90

<210> 222 <211> 96

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 222

Ser Leu Glu Arg Pro Arg Phe Cys Leu Leu Ser Lys Glu Glu Gly Lys
5 10 15

Ser Phe Gly Phe His Leu Gln Gln Glu Leu Gly Arg Ala Gly His Val 20 25 30

Val Cys Arg Val Asp Pro Gly Thr Ser Ala Gln Arg Gln Gly Leu Gln 35 40 45

Glu Gly Asp Arg Ile Leu Ala Val Asn Asn Asp Val Val Glu His Glu 50 55 60

Asp Tyr Ala Val Val Arg Arg Ile Arg Ala Ser Ser Pro Arg Val 65 70 75 80

Leu Leu Thr Val Leu Ala Arg His Ala His Asp Val Ala Arg Ala Gln \$85\$ 90 95

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<210> 223
<211> 92
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 223
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Leu Arg Asp Arg Pro Phe Glu Arg Thr Ile Thr Met His Lys Asp Ser 1  $\phantom{\bigg|}$  5  $\phantom{\bigg|}$  10  $\phantom{\bigg|}$  15

Thr Gly His Val Gly Phe Ile Phe Lys Asn Gly Lys Ile Thr Ser Ile 20 25 30

Val Lys Asp Ser Ser Ala Ala Arg Asn Gly Leu Leu Thr Glu His Asn 35 40 45

Ile Cys Glu Ile Asn Gly Gln Asn Val Ile Gly Leu Lys Asp Ser Gln 50 60

Ile Ala Asp Ile Leu Ser Thr Ser Gly Thr Val Val Thr Ile Thr Ile 65 70 75 80

Met Pro Ala Phe Ile Phe Glu His Met Asn Ser Ser 85 90

<210> 224 <211> 88 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 224

Leu Glu Ile Lys Gl<br/>n Gly Ile Arg Glu Val Ile Leu Cys Lys Asp Gl<br/>n 1 5 10 15

Asp Gly Lys Ile Gly Leu Arg Leu Lys Ser Ile Asp Asn Gly Ile Phe 20. 25 30

Val Gln Leu Val Gln Ala Asn Ser Pro Ala Ser Leu Val Gly Leu Arg 35 40 45

Phe Gly Asp Gln Val Leu Gln Ile Asn Gly Glu Asn Cys Ala Gly Trp 50 55 60

Ser Ser Asp Lys Ala His Lys Val Leu Lys Gln Ala Phe Gly Glu Lys 65 70 75 80

Ile Thr Met Arg Ile His Arg Asp 85

<210> 225

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 225

Gln Arg Arg Arg Val Thr Val Arg Lys Ala Asp Ala Gly Gly Leu Gly 1 5 10 15

Ile Ser Ile Lys Gly Gly Arg Glu Asn Lys Met Pro Ile Leu Ile Ser 20 25 30 .

Lys Ile Phe Lys Gly Leu Ala Ala Asp Gln Thr Glu Ala Leu Phe Val\$35\$

Gly Asp Ala Ile Leu Ser Val Asn Gly Glu Asp Leu Ser Ser Ala Thr 50 60

His Asp Glu Ala Val Gln Val Leu Lys Lys Thr Gly Lys Glu Val Val 65 70 75 80

Leu Glu Val Lys Tyr Met Lys Asp Val Ser Pro Tyr Phe Lys 85 90

<210> 226

<211> 88

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 226

Ile Ser Ile Lys Gly Gly Arg Glu Asn Arg Met Pro Ile Leu Ile Ser 20 25 30

Lys Ile Phe Pro Gly Leu Ala Ala Asp Gln Ser Arg Ala Leu Arg Leu 35 40 45

Gly Asp Ala Ile Leu Ser Val Asn Gly Thr Asp Leu Arg Gln Ala Thr 50 55 60

His Asp Gln Ala Val Gln Ala Leu Lys Arg Ala Gly Lys Glu Val Leu 65 70 75 80

Leu Glu Val Lys Phe Ile Arg Glu 85

<210> 227

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 227

Glu Pro Phe Tyr Ser Gly Glu Arg Thr Val Thr Ile Arg Arg Gln Thr 1  $\phantom{-}5\phantom{+}10\phantom{+}15\phantom{+}15$ 

Val Gly Gly Phe Gly Leu Ser Ile Lys Gly Gly Ala Glu His Asn Ile 20 25 30

Pro Val Val Val Ser Lys Ile Ser Lys Glu Gln Arg Ala Glu Leu Ser 35 40 45

Gly Leu Leu Phe Ile Gly Asp Ala Ile Leu Gln Ile Asn Gly Ile Asn 50 55 60

Val Arg Lys Cys Arg His Glu Glu Val Val Gln Val Leu Arg Asn Ala 65 70 75 80

Gly Glu Glu Val Thr Leu Thr Val Ser Phe Leu Lys Arg Ala Pro Ala 85 90 95

Phe Leu Lys Leu 100

<210> 228

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 228

Ser His Gln Gly Arg Asn Arg Arg Thr Val Thr Leu Arg Arg Gln Pro 1 5 10 15

Val Gly Gly Leu Gly Leu Ser Ile Lys Gly Gly Ser Glu His Asn Val 20 25 30

Pro Val Val Ile Ser Lys Ile Phe Glu Asp Gln Ala Ala Asp Gln Thr 35 40 45

Gly Met Leu Phe Val Gly Asp Ala Val Leu Gln Val Asn Gly Ile His 50 55 60

Val Glu Asn Ala Thr His Glu Glu Val Val His Leu Leu Arg Asn Ala 65 70 75 80

Gly Asp Glu Val Thr Ile Thr Val Glu Tyr Leu Arg Glu Ala Pro Ala 85 90 95

Phe Leu Lys

<210> 229

<211> 91

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 229

Arg Gly Glu Thr Lys Glu Val Glu Val Thr Lys Thr Glu Asp Ala Leu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Gly Leu Thr Ile Thr Asp Asn Gly Ala Gly Tyr Ala Phe Ile Lys Arg 20 25 30

Ile Lys Glu Gly Ser Ile Ile Asn Arg Ile Glu Ala Val Cys Val Gly 35 40 45

Asp Ser Ile Glu Ala Ile Asn Asp His Ser Ile Val Gly Cys Arg His 50 60

Tyr Glu Val Ala Lys Met Leu Arg Glu Leu Pro Lys Ser Gln Pro Phe 70 75 80

Thr Leu Arg Leu Val Gln Pro Lys Arg Ala Phe 85 <210> 230 <211> 88 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 230 His Ser Ile His Ile Glu Lys Ser Asp Thr Ala Ala Asp Thr Tyr Gly 10 Phe Ser Leu Ser Ser Val Glu Glu Asp Gly Ile Arg Arg Leu Tyr Val Asn Ser Val Lys Glu Thr Gly Leu Ala Ser Lys Lys Gly Leu Lys Ala Gly Asp Glu Ile Leu Glu Ile Asn Asn Arg Ala Ala Asp Ala Leu Asn 55 Ser Ser Met Leu Lys Asp Phe Leu Ser Gln Pro Ser Leu Gly Leu Leu 75 70 Val Arg Thr Tyr Pro Glu Leu Glu 85 <210> 231 <211> 97 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 231

Pro Leu Asn Val Tyr Asp Val Gln Leu Thr Lys Thr Gly Ser Val Cys
1 10 15

Asp Phe Gly Phe Ala Val Thr Ala Gln Val Asp Glu Arg Gln His Leu 20 25 30

Ser Arg Ile Phe Ile'Ser Asp Val Leu Pro Asp Gly Leu Ala Tyr Gly 35 40 45

Glu Gly Leu Arg Lys Gly Asn Glu Ile Met Thr Leu Asn Gly Glu Ala

50 55 60

Val Ser Asp Leu Asp Leu Lys Gln Met Glu Ala Leu Phe Ser Glu Lys 65 70 75 80

Ser Val Gly Leu Thr Leu Ile Ala Arg Pro Pro Asp Thr Lys Ala Thr 85 90 95

Leu

<210> 232

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 232

Gln Arg Val Glu Ile His Lys Leu Arg Gln Gly Glu Asn Leu Ile Leu 1 5 10 15

Gly Phe Ser Ile Gly Gly Gly Ile Asp Gln Asp Pro Ser Gln Asn Pro 20 25 30

Phe Ser Glu Asp Lys Thr Asp Lys Gly Ile Tyr Val Thr Arg Val Ser 35 40 45

Glu Gly Gly Pro Ala Glu Ile Ala Gly Leu Gln Ile Gly Asp Lys Ile 50 55 60

Met Gln Val Asn Gly Trp Asp Met Thr Met Val Thr His Asp Gln Ala 65 70 75 80

Arg Lys Arg Leu Thr Lys Arg Ser Glu Glu Val Val Arg Leu Leu Val 85 90 95

Thr Arg Gln Ser Leu Gln Lys 100

<210> 233

<211> 86

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 233

Arg Lys Glu Val Glu Val Phe Lys Ser Glu Asp Ala Leu Gly Leu Thr 5 10 15

Ile Thr Asp Asn Gly Ala Gly Tyr Ala Phe Ile Lys Arg Ile Lys Glu 20 25 30

Gly Ser Val Ile Asp His Ile His Leu Ile Ser Val Gly Asp Met Ile 35 40 45

Glu Ala Ile Asn Gly Gln Ser Leu Leu Gly Cys Arg His Tyr Glu Val 50 55 60

Ala Arg Leu Leu Lys Glu Leu Pro Arg Gly Arg Thr Phe Thr Leu Lys 65 70 75 80

Leu Thr Glu Pro Arg Lys

<210> 234

<211> 91

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 234

His Ser His Pro Arg Val Val Glu Leu Pro Lys Thr Asp Glu Gly Leu  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gly Phe Asn Val Met Gly Gly Lys Glu Gln Asn Ser Pro Ile Tyr Ile 20 25 30

Ser Arg Ile Ile Pro Gly Gly Val Ala Glu Arg His Gly Gly Leu Lys  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Arg Gly Asp Gln Leu Leu Ser Val Asn Gly Val Ser Val Glu Gly Glu 50 60

His His Glu Lys Ala Val Glu Leu Leu Lys Ala Ala Lys Asp Ser Val 65 70 75 80

Lys Leu Val Val Arg Tyr Thr Pro Lys Val Leu 85 90

<210> 235

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<211> 97
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 235
Leu Ser Asn Gln Lys Arg Gly Val Lys Val Leu Lys Gln Glu Leu Gly
               5
                                   10
Gly Leu Gly Ile Ser Ile Lys Gly Gly Lys Glu Asn Lys Met Pro Ile
                               25
Leu Ile Ser Lys Ile Phe Lys Gly Leu Ala Ala Asp Gln Thr Gln Ala
               40
Leu Tyr Val Gly Asp Ala Ile Leu Ser Val Asn Gly Ala Asp Leu Arg
Asp Ala Thr His Asp Glu Ala Val Gln Ala Leu Lys Arg Ala Gly Lys
Glu Val Leu Leu Glu Val Lys Tyr Met Arg Glu Ala Thr Pro Tyr Val
                                   90
Lys
<210> 236
<211> 98
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 236
Ile Gln Arg Ser Ser Ile Lys Thr Val Glu Leu Ile Lys Gly Asn Leu
Gln Ser Val Gly Leu Thr Leu Arg Leu Val Gln Ser Thr Asp Gly Tyr
           20
                               25
Ala Gly His Val Ile Ile Glu Thr Val Ala Pro Asn Ser Pro Ala Ala
                           40
```

Ile Ala Asp Leu Gln Arg Gly Asp Arg Leu Ile Ala Ile Gly Gly Val

55

Lys Ile Thr Ser Thr Leu Gln Val Leu Lys Leu Ile Lys Gln Ala Gly 65 70 75 80

Asp Arg Val Leu Val Tyr Tyr Glu Arg Pro Val Gly Gln Ser Asn Gln
85 90 95

Gly Ala

<210> 237

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 237

Ile Ala Gly Gly Lys Gly Ser Thr Pro Tyr Lys Gly Asp Asp Glu Gly 20 25 30

Ile Phe Ile Ser Arg Val Ser Glu Glu Gly Pro Ala Ala Arg Ala Gly 35 40 45

Val Arg Val Gly Asp Lys Leu Leu Glu Val Asn Gly Val Ala Leu Gln 50 60

Gly Ala Glu His His Glu Ala Val Glu Ala Leu Arg Gly Ala Gly Thr 65 70 75 80

Ala Val Gln Met Arg Val Trp Arg Glu Arg Met Val Glu Pro Glu Asn 85 90 . 95

Ala Glu Phe Ile Val Thr Asp 100

<210> 238

<211> 105

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 238

Arg Glu Leu Cys Ile Gln Lys Ala Pro Gly Glu Arg Leu Gly Ile Ser 5 . 10 Ile Arg Gly Gly Ala Arg Gly His Ala Gly Asn Pro Arg Asp Pro Thr 20 25 . Asp Glu Gly Ile Phe Ile Ser Lys Val Ser Pro Thr Gly Ala Ala Gly 40 Arg Asp Gly Arg Leu Arg Val Gly Leu Arg Leu Leu Glu Val Asn Gln Gln Ser Leu Leu Gly Leu Thr His Gly Glu Ala Val Gln Leu Leu Arg Ser Val Gly Asp Thr Leu Thr Val Leu Val Cys Asp Gly Phe Glu Ala Ser Thr Asp Ala Ala Leu Glu Val Ser 100 <210> 239 <211> 105 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 239 Leu Glu Gly Pro Tyr Pro Val Glu Glu Ile Arg Leu Pro Arg Ala Gly Gly Pro Leu Gly Leu Ser Ile Val Gly Gly Ser Asp His Ser Ser His Pro Phe Gly Val Gln Glu Pro Gly Val Phe Ile Ser Lys Val Leu Pro Arg Gly Leu Ala Ala Arg Ser Gly Leu Arg Val Gly Asp Arg Ile Leu Ala Val Asn Gly Gln Asp Val Arg Asp Ala Thr His Gln Glu Ala Val Ser Ala Leu Leu Arg Pro Cys Leu Glu Leu Ser Leu Leu Val Arg Arg

90

Asp Pro Ala Glu Phe Ile Val Thr Asp 100 <210> 240 <211> 97 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 240 Pro Leu Arg Gln Arg His Val Ala Cys Leu Ala Arg Ser Glu Arg Gly Leu Gly Phe Ser Ile Ala Gly Gly Lys Gly Ser Thr Pro Tyr Arg Ala Gly Asp Ala Gly Ile Phe Val Ser Arg Ile Ala Glu Gly Gly Ala Ala His Arg Ala Gly Thr Leu Gln Val Gly Asp Arg Val Leu Ser Ile Asn 55 Gly Val Asp Val Thr Glu Ala Arg His Asp His Ala Val Ser Leu Leu 70 75 Thr Ala Ala Ser Pro Thr Ile Ala Leu Leu Glu Arg Glu Ala Gly 85 90 Gly <210> 241 <211> 114 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide <400> 241 Thr Leu Thr Ile Leu Arg Gln Thr Gly Gly Leu Gly Ile Ser Ile Ala 10 Gly Gly Lys Gly Ser Thr Pro Tyr Lys Gly Asp Asp Glu Gly Ile Phe 20 20

Ile Ser Arg Val Ser Glu Glu Gly Pro Ala Ala Arg Ala Gly Val Arg
35 40 45

Val Gly Asp Lys Leu Glu Gly Ile Phe Val Ser Arg Ile Ala Glu 50 55 60

Gly Gly Ala Ala His Arg Ala Gly Thr Leu Gln Val Gly Asp Arg Val 65 70 75 80

Leu Ser Ile Asn Gly Val Asp Val Thr Glu Ala Arg His Asp His Ala 85 90 95

Val Ser Leu Leu Thr Ala Ala Ser Pro Thr Ile Ala Leu Leu Glu 100 105 110

Arg Glu

<210> 242

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 242

Ile Pro Pro Val Thr Thr Val Leu Ile Lys Arg Pro Asp Leu Lys Tyr  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gln Leu Gly Phe Ser Val Gln Asn Gly Ile Ile Cys Ser Leu Met Arg 20 25 30

Gly Gly Ile Ala Glu Arg Gly Gly Val Arg Val Gly His Arg Ile Ile  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Glu Ile Asn Gly Gln Ser Val Val Ala Thr Ala His Glu Lys Ile Val 50 55 60

Gln Ala Leu Ser Asn Ser Val Gly Glu Ile His Met Lys Thr Met Pro 70 75 80

Ala Ala Met Phe Arg Leu Leu Thr Gly Gln Glu Asn Ser Ser Leu 85 90 95

<210> 243

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<211> 110
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 243
Ile His Phe Ser Asn Ser Glu Asn Cys Lys Glu Leu Gln Leu Glu Lys
               5
                                   10
His Lys Gly Glu Ile Leu Gly Val Val Val Glu Ser Gly Trp Gly
Ser Ile Leu Pro Thr Val Ile Leu Ala Asn Met Met Asn Gly Gly Pro
               40
Ala Ala Arg Ser Gly Lys Leu Ser Ile Gly Asp Gln Ile Met Ser Ile
Asn Gly Thr Ser Leu Val Gly Leu Pro Leu Ala Thr Cys Gln Gly Ile
Ile Lys Gly Leu Lys Asn Gln Thr Gln Val Lys Leu Asn Ile Val Ser
                                  90
Cys Pro Pro Val Thr Thr Val Leu Ile Lys Arg Asn Ser Ser
         100
                              105
<210> 244
<211> 101
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 244
Ile Trp Glu Gln His Thr Val Thr Leu His Arg Ala Pro Gly Phe Gly
                                   10
Phe Gly Ile Ala Ile Ser Gly Gly Arg Asp Asn Pro His Phe Gln Ser
           20
                               25
Gly Glu Thr Ser Ile Val Ile Ser Asp Val Leu Lys Gly Gly Pro Ala
       35
```

Glu Gly Gln Leu Gln Glu Asn Asp Arg Val Ala Met Val Asn Gly Val

55

Ser Met Asp Asn Val Glu His Ala Phe Ala Val Gln Gln Leu Arg Lys 70 75 80

Ser Gly Lys Asn Ala Lys Ile Thr Ile Arg Arg Lys Lys Lys Val Gln 85 90 95

Ile Pro Asn Ser Ser 100

<210> 245

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 245

Arg Lys Asn Glu Glu Tyr Gly Leu Arg Leu Ala Ser His Ile Phe Val 20 25 30

Lys Glu Ile Ser Gln Asp Ser Leu Ala Ala Arg Asp Gly Asn Ile Gln 35 40 45

Glu Gly Asp Val Val Leu Lys Ile Asn Gly Thr Val Thr Glu Asn Met 50 60

Ser Leu Thr Asp Ala Lys Thr Leu Ile Glu Arg Ser Lys Gly Lys Leu 65 70 75 80

Lys Met Val Val Gln Arg Asp Arg Ala Thr Leu Leu Asn Ser Ser 85 90 95

<210> 246

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 246

Ile Arg Met Lys Leu Val Lys Phe Arg Lys Gly Asp Ser Val Gly Leu 1 5 10 15

Arg Leu Ala Gly Gly Asn Asp Val Gly Ile Phe Val Ala Gly Val Leu 20 25 30

Glu Asp Ser Pro Ala Ala Lys Glu Gly Leu Glu Gly Asp Gln Ile 35 40 45

Leu Arg Val Asn Asn Val Asp Phe Thr Asn Ile Ile Arg Glu Glu Ala 50 60

Val Leu Phe Leu Leu Asp Leu Pro Lys Gly Glu Glu Val Thr Ile Leu 65 70 75 80

Ala Gln Lys Lys Lys Asp Val Phe Ser Asn 85 90

<210> 247

<211> .99

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 247

Ile Gln His Thr Val Thr Leu His Arg Ala Pro Gly Phe Gly Phe Gly 1 5 10 15

Ile Ala Ile Ser Gly Gly Arg Asp Asn Pro His Phe Gln Ser Gly Glu 20 25 30

Thr Ser Ile Val Ile Ser Asp Val Leu Lys Gly Gly Pro Ala Glu Gly 35 40 45

Gln Leu Gln Glu Asn Asp Arg Val Ala Met Val Asn Gly Val Ser Met 50 . 55 60

Asp Asn Val Glu His Ala Phe Ala Val Gln Gln Leu Arg Lys Ser Gly 65 70 75 80

Lys Asn Ala Lys Ile Thr Ile Arg Arg Lys Lys Lys Val Gln Ile Pro 85 90 95

Asn Ser Ser

<210> 248 <211> 90

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<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 248

His Ala Pro Asn Thr Lys Met V
1 5

Gly Leu Arg Leu Ala Gly Gly A
20

Ile Gln Glu Gly Thr Ser Ala G
35 4

Gln Ile Leu Lys Val Asn Thr G
50 55
.

Asp Ala Val Leu Tyr Leu Leu G
65 70
```

His Ala Pro Asn Thr Lys Met Val Arg Phe Lys Lys Gly Asp Ser Val 1 5 10 15

Gly Leu Arg Leu Ala Gly Gly Asn Asp Val Gly Ile Phe Val Ala Gly 20 25 30

Ile Gl<br/>n Glu Gly Thr Ser Ala Glu Gl<br/>n Glu Gly Leu Gl<br/>n Glu Gly Asp $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Gln Ile Leu Lys Val Asn Thr Gln Asp Phe Arg Gly Leu Val Arg Glu 50 60

Asp Ala Val Leu Tyr Leu Leu Glu Ile Pro Lys Gly Glu Met Val Thr 65 70 75 80

Ile Leu Ala Gln Ser Arg Ala Asp Val Tyr 85 90

<210> 249 <211> 79 <212> PRT <213> Artificial Sequence <220> <223> Synthetic peptide

<400> 249

Arg Val Leu Leu Met Lys Ser Arg Ala Asn Glu Glu Tyr Gly Leu Arg 1 5 10 15

Leu Gly Ser Gln Ile Phe Val Lys Glu Met Thr Arg Thr Gly Leu Ala 20 25 30

Thr Lys Asp Gly Asn Leu His Glu Gly Asp Ile Ile Leu Lys Ile Asn 35 40 45

Gly Thr Val Thr Glu Asn Met Ser Leu Thr Asp Ala Arg Lys Leu Ile 50 55 60

Glu Lys Ser Arg Gly Lys Leu Gln Leu Val Val Leu Arg Asp Ser 65 70 75

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<210> 250
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<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 250

Arg Gly Tyr Ser Pro Asp Thr Arg Val Val Arg Phe Leu Lys Gly Lys 10 5

Ser Ile Gly Leu Arg Leu Ala Gly Gly Asn Asp Val Gly Ile Phe Val 20 25

Ser Gly Val Gln Ala Gly Ser Pro Ala Asp Gly Gln Gly Ile Gln Glu

Gly Asp Gln Ile Leu Gln Val Asn Asp Val Pro Phe Gln Asn Leu Thr 55

Arg Glu Glu Ala Val Gln Phe Leu Leu Gly Leu Pro Pro Gly Glu Glu 70

Met Glu Leu Val Thr Gln Arg Lys Gln Asp Ile Phe Trp Lys Met Val 85 90

Gln Ser Glu Phe Ile Val Thr Asp 100

<210> 251 <211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 251

Ile Pro Gly Asn Ser Thr Ile Trp Glu Gln His Thr Ala Thr Leu Ser

Lys Asp Pro Arg Arg Gly Phe Gly Ile Ala Ile Ser Gly Gly Arg Asp 25

Arg Pro Gly Gly Ser Met Val Val Ser Asp Val Val Pro Gly Gly Pro

Ala Glu Gly Arg Leu Gln Thr Gly Asp His Ile Val Met Val Asn Gly 50 55 60

Val Ser Met Glu Asn Ala Thr Ser Ala Phe Ala Ile Gln Ile Leu Lys 65 70 75 80

Thr Cys Thr Lys Met Ala Asn Ile Thr Val Lys Arg Pro Arg Ile 85 90 95

His Leu Pro Ala Glu Phe Ile Val Thr Asp 100 105

<210> 252

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 252

Asp Ser Glu Glu Phe Gly Val Lys Leu Gly Ser Gln Ile Phe Ile Lys 20 25 30

His Ile Thr Asp Ser Gly Leu Ala Ala Arg His Arg Gly Leu Gln Glu 35 40 45

Gly Asp Leu Ile Leu Gln Ile Asn Gly Val Ser Ser Gln Asn Leu Ser 50 60

Leu Asn Asp Thr Arg Arg Leu Ile Glu Lys Ser Glu Gly Lys Leu Ser 65 70 75 80

Leu Leu Val Leu Arg Asp Arg Gly Gln Phe Leu Val Asn Ile Pro Asn 85 90 95

Ser Ser

<210> 253

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

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<400> 253
Gly Ile Pro Gly Asn
<210> 254
<211> 5
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 254
Gly Gly Gly Ser
<210> 255
<211> 14
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 255
Glu Gly Lys Ser Ser Gly Ser Glu Ser Lys Val Asp
<210> 256
<211> 18
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 256
Lys Glu Ser Gly Ser Val Ser Ser Glu Gln Leu Ala Gln Phe Arg Ser
Leu Asp
<210> 257
<211> 11
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
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<400> 257
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
<210> 258
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 258
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ser Thr Asn Ser Val
Arg Leu Met Leu
           20
<210> 259
<211> 11
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 259
Arg Arg Ser Thr Asn Ser Val Arg Leu Met Leu
<210> 260
<211> 9
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 260
Ser Thr Asn Ser Val Arg Leu Met Leu
1 5
<210> 261
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
```

<400> 261

```
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Val Ala Ala Thr
                 5
Ser Ile Asn Leu
            20
<210> 262
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 262
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Ser Asp Arg
Thr Ile Trp Ala
<210> 263
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 263
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Ser Asp Arg
Thr Ile Ile Ala
            20
<210> 264
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 264
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ser Arg Thr Asp Arg
                                    10
Lys Tyr Trp Ala
```

```
<210> 265
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 265
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Gly Asp Arg
Lys Ile Arg Val
<210> 266
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 266
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Thr Asp Arg
Lys Val Glu Val
           20
<210> 267
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 267
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Gly Asp Arg
Lys Tyr Ile Val
           20
<210> 268
<211> 20
<212> PRT
<213> Artificial Sequence
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```
<220>
<223> Synthetic peptide
<400> 268
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ser Arg Thr Asp Arg
Lys Tyr Gln Ile
           20
<210> 269
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 269
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Gly Asp Arg
Lys Val Pro Val
           20
<210> 270
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 270
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Gln Asp Glu Arg Arg
Leu Ile Val Leu
           20
<210> 271
<211> 20
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic peptide
<400> 271
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Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Arg Gly Asp Arg

```
10
                  15
```

```
Leu Val Ser Leu
            20
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<210> 272

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<400> 273

Tyr Arg Ile Val

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Leu Glu Tyr Val 20

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Glu Thr Trp Val
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Glu Thr Ala Leu
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Gln Phe Tyr Ile
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Gly Phe Arg Gln
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Val Leu Ser Leu
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Lys Thr Ser Tyr
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Pro Leu Tyr Ile
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Pro Val Tyr Ile
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Pro Val Tyr Leu
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Lys Asn Tyr Val
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Ser Thr Asp Leu
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Trp Gln Tyr Ala
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Ser Ile Val Phe
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Glu Ser Asp Val 20

<210> 306 <211> 20 <212> PRT

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<400> 306

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Thr Ser Val Ile 20

<210> 307 <211> 20

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<400> 307

Leu Leu Val Gln 20

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<211> 20

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<400> 308

Pro Gly Gln Pro Pro Lys Val Lys Ser Glu Phe Asn Ser Tyr Ser Leu  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Thr Gly Tyr Val

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Thr Ser Pro Leu
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Asp Leu Glu Ile
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Asp Ser Trp Val
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Gln Thr Ala Trp
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Gln Gly Asp Pro Ala Leu Gln Asp Ala Gly Asp Ser Ser Arg Lys Glu
Tyr Phe Ile
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Trp Leu Lys Val
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Val Leu Ser Leu
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Ser Ala Asn Leu
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Gln Thr Glu Val
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Tyr Lys Leu
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 Tyr Ser Leu Ala
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Glu Ser Thr Val
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Glu Ser Glu Val
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Thr Asp Val

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Asn Leu Val Ile
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Lys Lys Ile Val 20

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Lys Arg Trp Ala 20

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Lys Val Pro Val

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Gly Ile Trp Ala
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Glu Thr Arg Val
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